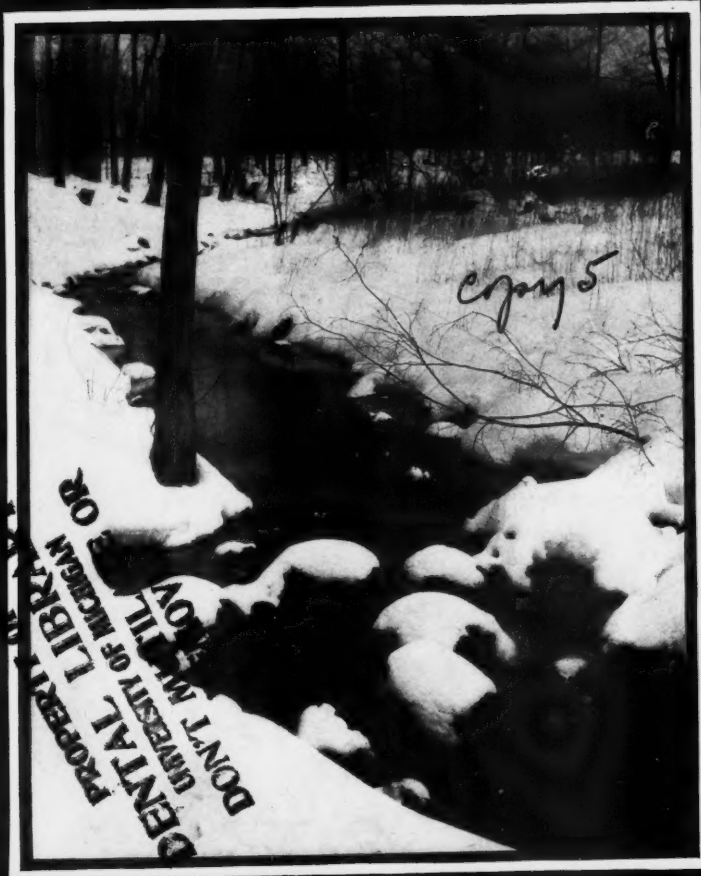


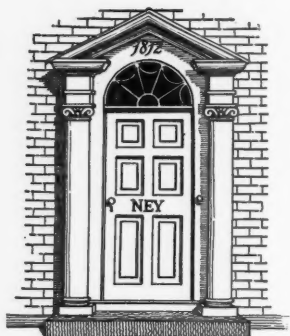
THE DENTAL DIGEST



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Firm Foundations

***The
Superstructure
isn't all.***

What's underneath?

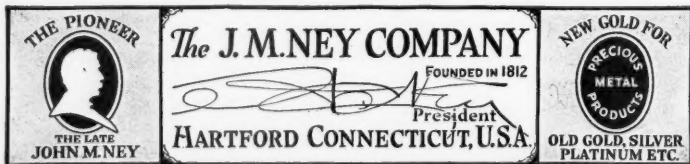
A few years ago The Ney Company moved from its old building on Asylum Street, Hartford, to its new building on Elm Street—a plant constructed with the purpose of giving greater facilities for caring for an ever-increasing business.

Recently, the old building was torn down to make way for a new street that was being opened. All went well until the workmen reached the foundations of the old vaults—then the work of demolition halted. It was discovered that those foundations went down into the earth eighteen feet and were as solid as New England granite. They were constructed to last through generations.

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No. 2

Complete Operation for Pyorrhea Alveolaris

By G. D. Laymon, D.D.S., Miami, Fla.

The operation I am about to describe is indicated only in advanced cases, where there is more or less necrosis of the alveolar process and involvement of contiguous soft tissue. It is more radical than the operation usually advocated, but the healing of the parts is much more rapid than when half-way measures are employed.

Whether one tooth is involved or a dozen, the operation is essentially the same. I use U. S. P. tincture of iodine to sterilize the field of operation. Complete anesthesia is obtained by infiltration with a 2 per cent solution of novocain.

At each end of the infected area an incision is made in the labial gum. Each incision is made midway between two teeth; it extends from the gingival border to a line joining the ends of the roots of the teeth, and is carried down to the bone, dividing the periosteum.

With a blunt dissector the flap of soft tissue, including the periosteum, is then raised from the bone.

First, all tartar is removed, and the teeth made perfectly smooth.

Second, all necrosed alveolar bone is removed, and the surface planed smooth with proper chisels, using also, when necessary, the stones ordinarily employed in dental work. This part of the operation must be done thoroughly, going relentlessly between the teeth, or even beneath them, wherever softened bone is found. In very bad cases a similar flap must be dissected back and similar bone curettage done on the inner (lingual) side, but this is rarely necessary.

Third—and this step is fully as important as the others—the inner surface of the flap must be inspected and thoroughly cleansed. The tissues of the flap are always diseased; the periosteal surface is often one mass of gray or livid granulations, exuding foul pus. These granulations are to be removed completely with a sharp curette.

Nearly all text books warn the dentist to keep away from the soft tissues, to let them alone. I can see no reason whatever in this teaching. The general surgeon removes sloughing tissue wherever he finds it, and the dental surgeon should do the same. In my experience the beneficial results of thoroughly cleansing the whole field of operation fully sustain this contention. And theoretically—what is the sense in

cleansing one side of a wound and then approximating to it the other foul, sloughing side?

After mopping the whole denuded area with tincture of iodine, the flap is sutured in place with plain catgut, size 00. The sutures may be passed between the teeth, the needle going between the necks below the line of the gum margin, and the return loop snapped between the teeth as one inserts dental floss. The incisions forming the sides of the flap are likewise sutured.

A sterile gauze pack of normal salt solution is placed over the flap. This may be renewed as often as it becomes soiled, but is worn continuously, night and day, except at meal time. The sutures should be removed the third day, and the stitch holes touched with tincture of iodine.

This is a radical operation, and although it may at first glance seem severe, the results more than justify the thorough work. The healing in most instances is remarkably rapid; indeed, in a very large proportion of cases we observe no pus formation whatever. Within ten days, or two weeks at the latest, the flap should be firmly in place, forming a hard, healthy gum.

A Brief Criticism of Dr. J. W. McLaren's Article, "Failure of Artificial Dentures Under Modern Methods, and a Simple Remedy"

By Stewart J. Spence, Chattanooga, Tenn.

In Dr. McLaren's article, which appeared in the Dental Digest of December, 1921, he suggests a method for preventing compression of cast in flask-closing, by using rubber so softened by benzine as not to require heavy pressure. He says that any good plaster of paris may be used instead of the "artificial stones on the market." Permit me to make a few comments.

As all plaster of paris expands in setting, Dr. McLaren's method does not provide against misfit from this source.

As all plaster of paris (and some of the "artificial stones") become so softened during vulcanization as not to have sufficient strength to resist the effort of vulcanite to contract in cooling, therefore Dr. McLaren's investment of mere plaster of paris is apt to result in shrunken and (probably) warped plates.

Several of the "artificial stones" set about fourfold harder than does plaster of paris, and my experiments prove that this is sufficient hardness to prevent any appreciable compression of the cast in flask-

closing. Were it not so, I should make my plaster to set harder; which can be done by the dentist by simply adding a retarder and working it longer. About ten grains of alum to a mix and ten minutes more of working it, fully doubles the hardness. But this is unnecessary, unless possibly for swaging metal plates by the hammer.

Dr. McLaren speaks of *often rebasing*. This is contrary to my experience. He also speaks of *regrinding*, rightly supposing that this may be needed by the teeth in flask-closing being forced into the investment. This is very apt to occur if mere plaster of paris is used for the investment; but when any of the good "artificial stones" are used such compression is inappreciable. Perhaps, also, it occurs to some extent when, as advised by some high authorities, fifty per cent only of Spence's Plaster is used in investing, the balance being plaster of paris. I prefer to use it "straight." However, some regrinding is usually required, this probably being due to our not getting perfect occlusion while setting up the teeth; the shrinkage of the melted wax in cooling, and other things, making this well-nigh impossible.

Dr. McLaren mentions a cone-shaped space in the plaster investment being filled by swollen rubber. Of course we know the rubber will swell from heat, but this can occur only when it is not firmly held in on all sides. After vulcanization, when the investing plaster has become softened, the vulcanite will contract in cooling, unless firmly held by its investment; and mere plaster of paris is rarely firm enough. I cannot see how the rubber can expand in a tightly closed flask and an unsoftened investment, but it is easy to see how it can contract in a softened investment.

Like soft rubber, plaster of paris expands when heated to about 300 degrees F., but like it, this cannot occur in a firm investment; and pressure-hardened rubber is very firm. The cone-shaped space could have been filled by either or both of these swellings.

The Porcelain Jacket Crown

By ———

The method followed by the dental profession in Porcelain Jacket construction is to bake a porcelain crown to fit a prepared tooth core. My improved technic is to make the jacket first and afterward grind the tooth core until it fits this porcelain crown.

In order to prove the superiority of my method over the present one it is necessary to go into considerable detail.

The first thing to do on the day the operation is to be performed is to instruct your assistant to carefully, thoroughly and methodically dust off the chair and surrounding tissues (I mean surfaces). While

there are very many ways in which this may be done, we, in my office, have found that a feather duster is the quickest and most efficient. (Lantern slide No. 1, showing various forms of dusters, including handles.)

These dusters are obtainable at Sears-Roebuck Co., and Hart, Schaffner & Marx, but we have grown into the habit of making them ourselves from chicken feathers. We raise the chickens ourselves in our laboratory. (Slide No. 2, showing group of dental hygienists.)

It is not necessary to go into details of chicken raising at this time, except possibly to say that we have found from experience that the best poultry food is Mavgart Inlay wax. This wax, procurable at Woolworth's, is well known to leave no residue.

After that has been accomplished, i.e. the dusting of your office, not the feeding of chickens, we always look in our appointment book to learn just what time the patient is expected. Perhaps it would be more expedient to do that first, because it frequently happens to us that the patient is not expected until the following morning, and this dusting might well have been postponed until then.

Assuming, however, that your patient is expected the same morning, it is advisable to make sure you have a white or nearly white coat on hand. (Slide No. 3, showing types of coats.)

I say white advisedly. Dr. Mills, in *Cosmos*, June, 1907, recommends grey, and Dr. J. Fuller Beens, *Digest*, October, 1912, prefers tan, but for our purpose we find white or nearly white most suitable. It enables us to distinguish the coats from our towels which are much darker in color—in fact almost black.

The patient when she arrives, if she does, should be seated in your chair from the left, never from the right. We have tried to obtain a picture showing this very accurately but at present the patient is out of town. At a future date I hope to be able to picturize this for you.

Our reason for this procedure with the patient must be explained to be understood. In seating the patient from the left it is easy for the operator to learn at a glance whether or not she is carrying a purse. If she is not, an excuse may be instantly formed for postponing the visit to some more favorable time.

Assuming all conditions to be favorable, a linen napkin is placed around the patient's neck. These napkins may be any size you desire but we use one 8 x 14. I believe these measurements are inches although they may be meters. I had the measurements made by the bureau of measurements at Washington, as I believe in accuracy.

I trust I am not getting too technical, but these are the little points where many men fall down and then they wonder why the result is not perfect.

When the operation of making the porcelain crown is completed the patient is directed to the desk where the necessary financial arrangements are concluded. In my office I prefer to handle this end of it myself. Back in 1902 when I began my practice I permitted my secretary to take care of this work but as she left suddenly with approximately \$200 and has not yet returned I am forced to conclude that something is detaining her.

I have purposely refrained from discussing the actual construction of the Jacket Crown, because these little details are always left to my assistants. I do not know just how they do the work nor do I care so long as the results are as I wish them to be.

If there are any questions now I will try my best to answer them in a comprehensive manner.

Dr. Gysi Injured

During a recent trip in the Swiss Alps, Professor Dr. Alfred Gysi slipped on the snow and fell in such way as to crush the zygomatic arch.

At the time of the accident he was four hours from Zurich, and the letter from Dr. Schroeder telling about the accident says that during that time he never saw so much nerve displayed by a human being, even on the battlefield.

The operation showed three fractured pieces, one of which had been forced into the antrum. This piece was removed. A hole was drilled into the second piece and it was pulled into position. Nothing is said about the location of the third piece so it was probably superficial.

Owing to the extraordinary intelligence with which Dr. Gysi has ordered his diet and his habits for several years, he responded readily to treatment and is making a favorable recovery.

The letter (dated January 4th) said that he was able to take a little time each day for a pull at his favorite pipe, and was beginning to attend to some of his duties in connection with the Dental College of the University of Zurich.

Treatment of Abscessed Teeth—A Rapid and Successful Technic

By Charles I. Stolloff, D.D.S., New York City

INTRODUCTION

Seeking a practical yet rapid technic for abscessed teeth whose retention is desirable, I have very closely and especially observed a great number of such teeth, checking them up at regular intervals, over a period of four years. The technic as outlined below has given me gratifying clinical results.

In referring to abscessed teeth, the following is implied: Periapical infection resulting from (1) Decomposition in root canals, chemical, thermal, or electrolytic degeneration of pulp. (2) Faulty root canal work.

PRINCIPLES

One adheres to the accepted basic principles of root canal work. The technic is modified by a division into several steps:

- (1) Removal of decomposed pulp tissue, and drainage of pus when present.
- (2) Disinfection of canals and sinus, if present.
- (3) Ionization.
- (4) Immediate filling of canals.

My interpretation of the successful results obtained is that these are due to the rapidity with which this modified treatment is consummated. The technic requires disinfection of the canals and periapical tissues.

It is necessary to eliminate the original cause or source of infection. Tissue once disinfected can only become dangerous again by being re-contaminated. Hence, once disinfection has been completed, and while the tissue is in the sterile state, shut off the susceptible tissues from re-infection by hermetically sealing the canals under the strictest aseptic precautions and according to the modern technic. The protective body forces now have an opportunity to perform their functions of restoring the tissues to a normal state.

TECHNIC

The teeth under observation include anterior teeth, bicuspid, lower first molars, and several lower third molars, which have been tilted forward due to absence of lower first and second molars. The treatment is consummated within two or three sittings. The comparatively short time involved is a distinct advantage to both patient and operator.

At the first sitting the tooth is isolated by rubber dam, and pulp chamber very carefully opened. If possible the cavity should be immediately cleared of all soft carious tooth structure. The old filling, if the tooth has been previously filled, is carefully removed. Any frag-

ments of pulp tissue are carefully picked away. The pulp chamber is then irrigated with an antiseptic solution. In my experience 5 per cent chlorazene solution, has acted admirably. The pulp canal or canals are then entered. The debris is washed away as one proceeds, carefully avoiding any pressure which may force debris through the apex. Pus, if present, is carefully drained. At the first sitting the pulp chamber and canals are only mechanically cleansed, by use of pics and broaches, and by repeatedly flushing with the antiseptic solution. The canals are then ionized, using Lugol's solution upon the negative pole in tooth for a period of 15 minutes. After ionization, the canals can usually be dried.

Very tender or profusely discharging teeth are only opened to relieve the pressure of gas or pus at the first sitting, and are not hermetically sealed at this time. A profuse discharge can usually be stopped by an ionization treatment of 15 minutes, using Lugol's solution.

When fistulas are present, the crown, pulp chamber and canals are cleansed and disinfected, as above. The following device will facilitate the disinfection of the sinus: A needle and hub are firmly sealed in crown of tooth either with cement or gutta percha. The barrel of the all glass Luer syringe is then filled with solution, and adjusted to hub and needle. The solution can be readily forced through the sinus under pressure. First, a disinfectant solution like 5 per cent chlorazene is used, followed by Lugol's solution. Ionization follows as in teeth without fistulas. It is remarkable sometimes to see how one treatment will cause a chronic or persistent sinus to be obliterated.

At a second sitting chemical means are employed to disinfect canals. The chemical agents used need not vary from those usually employed for this purpose by the operator. I have at various times used sodium and potassium, 50 per cent sulphuric acid, and latterly I have been using sodium methylate. Sodium methylate is used in two strengths—10 per cent in pulp chambers, and 2 per cent in canals.

After the chemical reagents have been employed and properly neutralized, the tooth is ionized for fifteen minutes and immediately thereafter the tooth canals are filled. The modern technic is employed. Lugol's, or other iodine solutions, such as Churchill's, is used on the negative pole in the tooth. The color changes from black to white. This is a visible demonstration that something striking has happened to the colored element. This seems to prove that the iodine from the solution employed has been utilized. The stimulating effect of the electric current is also very beneficial. Restorative work necessary is done as indicated.

COMMENT

Although every pulpless tooth might be considered a potential focus of infection, we must not lose sight of the fact that nature has endowed

the wonderful human mechanism with many protective devices of whose number and range of action we as yet know very little, but whose possibilities and potentialities should not be ignored. There is a vast, as yet unexplored field, including the endocrines and hormones, whose functions are as yet theoretic. The fact that our knowledge of the exact functioning of the human machine in its entirety is empirical, should cause hesitation before any extreme or faddist stand is taken upon any definite method of procedure.

There are certain general and local factors to be considered in any type of root canal work. General factors which contribute towards increasing or decreasing the resisting powers of the individual must be considered. Neurotics, diabetics, nephritics, convalescents from wasting diseases and diseases like pneumonia and influenza; women during menopause or pregnancy; these assuredly are not fit subjects for any root canal work, much less abscess treatment. Great destruction of apical or periapical tissues, as evidenced by radiographic examination, contraindicates treatment.

The continuation of this article in the March issue will show some very interesting Case Histories.

Death of Dr. Grossman

Dr. M. E. Grossman, well-known Honolulu dentist, died at his home on December 14, 1921. A ritual service was held in the Masonic Temple under the auspices of Hawaiian Lodge No. 21, F. & A. M., of which the deceased was a member for many years. He was one of the first potentates of Alona Temple of the Mystic Shrine, besides having held numerous other offices in various Masonic bodies.

Dr. Grossman was born in San Francisco in 1859, but for 39 years had made Hawaii his permanent home. It is said that a great deal of the credit for the elevation of the dental profession in the mid-Pacific islands belongs to him, as he was always an active worker in this regard and directly instrumental in having most of the existing laws affecting the welfare of the profession framed and enforced. In passing, it may be mentioned that he was for a number of years the official dentist to Queen Liliuokalani and her royal family.

Dr. Grossman was well known in the United States as he frequently visited San Francisco to attend dental meetings in order to keep in touch with the progress made in America. He also visited Chicago and other Illinois meetings.

No doubt there will be many members of the dental profession who will regret to learn of Dr. Grossman's death.

Preventable Diseases of Adult Life*

By Eugene Lyman Fisk, M.D., New York City

Perhaps no article which will appear in these pages this year will be more important to the dentist or his patients than this. It has been condensed as much as possible and brought forward to a point where it is hoped that it may attract the attention of many.

This article is very important to the dentist who wishes to prolong his period of efficiency and his life. The author's sources of information and his reputation are such that he would not write that old age is not a matter of time unless he knew whereof he wrote.

The statement that a minor infection, such as an infection about a tooth, may prevent the curative action of a specific remedy for systemic infection is extremely important. In reply to a letter upon this point the author wrote, "We have had experience with a man who had been to the best medical centers and had had the most thorough treatment, but showed a three or four Wasserman plus over a period of more than ten years. After the extraction of several infected teeth he showed a negative Wasserman and a complete disappearance of the general evidences of syphilis, as a result of syphilitic treatment which differed in no respect from the treatment he had previously received."

It will pay to put this article where you can read such portions of it as you desire, more than once.—(EDITOR.)



ONE of the common diseases of adult life is old age, another is middle age. These are not limited to adult life. The old age due to syphilis is sometimes attained in utero, and from then on we have instances of so-called premature senility. Senility, however, is always premature. Youth, actually, is not a function of time, but a physical state.

To prevent middle age, to prevent old age, or rather to postpone these periods of physical deterioration, has seemed to many a quixotic or even a fantastic proposition. Why this peculiar attitude of mind that refuses to admit the scientific probability of a radical change in the life cycle of man, even to the point of doubling it or trebling it? Inasmuch as communication with the dead is gravely discussed by cultured people, the mere doubling of the life span would in comparison seem a commonplace postulate. There has been no denial of the possibility of effecting such changes in the life cycles of lower organisms, even fairly complex organisms, and I think we must ascribe this skepticism as to greatly changing the human life cycle and this fatalism as to its fixity largely to human egotism. We still subconsciously cherish the belief that we are made in the image of our Maker, and

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York City, March 23, 1920.

that we are set apart from the rest of the living world, not only mentally and spiritually, but physically. There is, I think, to the average mind something almost repellant and sacrilegious in the suggestion that there could possibly be brought about any material change in the life cycle of man as fixed by tradition and so accurately portrayed by Shakespeare. Yet here and there, even in the literature of the remote past, we find a glimmer of light and an utterance of some philosopher which is identical with the thesis of this paper. For example, when Gorgias of Leontini, who had completed a hundred and seven years without ever relaxing his diligence or giving up work, was asked why he consented to remain so long alive, he replied, "I have no fault to find with old age." Cicero, commenting on this, says "That was a noble answer and worthy of a scholar, for fools impute their own frailties and guilt to old age."

There is a profound and tremendous significance in that utterance. He states in a sentence what I shall attempt to bring out in detail in this paper, namely, that old age is always premature, just as death from typhoid fever, apoplexy, or pneumonia is always premature, and that the physical changes noted at the advancing decades of life are not due to time, since time is not an entity, but an abstraction, a synthesis of space and motion; that physical collapse, whether abrupt or spread over a period of eighty years, is not in response to some mandate or inflexible law, but the result of the cumulative effect of incident antagonistic factors in the environment or in the individual. Simple and elementary as this proposition is, it is too seldom accepted or recognized in the attitude of medical men and hygienists toward the problems of health and disease. I ask your indulgence if I dwell for a little time on these underlying philosophic principles which mean so much in motivating this work. The correction of trouble at its source will never be systematic, comprehensive and effective if we accept average conditions as more or less fixed and as proper standards for measuring human excellence. How often we hear the statement that certain pathological conditions are "normal to the time of life." Such conditions may be common to the age period in which they predominate, but to call them normal is not only unscientific and inaccurate, reactionary and obstructive, but it actually postulates uncaused action.

Do not misunderstand me; I am not in favor of over-emphasizing the pathologic changes found in middle life and later. So far as the average individual's outlook and future are concerned we can reassure him as an individual that he is quite as well off as his neighbor, but as men interested in improving health ideals and in assisting the individual to improve his physical state, we are justified in telling him that we are not satisfied to leave him on this dead level of physical medi-

ocrity, but that we wish to assist him to a higher level, and that we believe it possible for humanity in general to climb to a higher level.

What scientific evidence is there that the life cycle of man may be changed, that the physical handicaps which accumulate as life advances, may be materially mitigated or eliminated? When we search for the original causes of disease, old age and death we find that they may readily be grouped under certain categories and that these categories are logically complete, although all the specific influences under each category cannot now be named. As each type of destructive influence is disclosed, however, it will surely find a place under the categories herein given, namely:

- Heredity;
- Infection;
- Poisons;
- Food Deficiency;
- Food Excess;
- Hormone Deficiency;
- Hormone Excess;
- Physical Trauma or Strain;
- Psychic Trauma or Strain;
- Physical Apathy or Disuse;
- Psychic Apathy or Disuse.

You will note that time does not appear in these categories and it would, of course, be absurd to place it there. It has nothing whatever to do with the changes that come about in the course of time. Neither does wear and tear appear there. While the human organism has very properly been compared in some respects to a machine, it differs radically from an inanimate machine in that in a state of complete health, with adequate nourishment, there is provision in the body for the maintenance of parts. Such wear and tear as there may be is included under psychic and physical trauma. The body does not simply wear out, it is infected out, poisoned out, starved out, or deficiencied out. So far as the individual is concerned, heredity may profoundly influence the quality of his tissues, his organs and his underlying resistance.

Admitting that there is some factor in the germ plasm that influences the life cycle, it can only be a physico-chemical influence conceivably subject to modification or control, as has been demonstrated in other organisms. We have the classic instance of Carrel's¹ experiment on the cells of the chicken embryo. In that experiment simple, undifferentiated tissue cells have for many years been kept alive and growing by protecting them from the influences named under the categories I have mentioned. That is, these cells were protected from

infection, from poison and from trauma; they were properly nourished, and they apparently have an indefinite lease of life. Recent experiments along this line have been carried out by Loeb² and others on the fruit fly. In the case of the fruit fly, however, we have a fairly complex organism whose life cycle has been increased by 900 per cent. by lowering of the temperature 20 degrees centigrade and slowing down the chemical reactions in the body. The fruit fly differs from the human organism in that it takes on the temperature of its environment and is susceptible to such control. This organism was likewise protected from adverse factors in the environment, especially from infection by placing the eggs in a solution of bichloride of mercury, and the final demise of the organism has been described as physiological death or the end of a chemical reaction slowed down and retarded by a lowered temperature. Death in the human organism is a condition of acidosis, so that in a certain sense the life of man may be described as a chemical reaction ending in acidosis and death. It has been figured out that if the same method that was applied in the case of the fruit fly could be applied to man, his life could be prolonged to 1,900 years. This sounds fantastic, but it is not a prediction, it is simply a principle, a principle that opens the door to science and human endeavor. In the case of the fruit fly, death was actually pathological, as it always is in man. The chemical state of the tissues, the influence of toxic substances formed and accumulated within its body finally killed this organism that had been aseptic from birth, as shown by control experiments.

That the human life cycle is subject to wide variation, according to conditions determined either by heredity or environment, is easily demonstrable. An infection leading to valvular heart defect, if it does not kill, places the individual in a class with from 50 to 150 per cent. extra mortality, McKenzie³ to the contrary notwithstanding. The present tendency to belittle the significance of valvular heart defects, notwithstanding the comprehensive and conclusive mortality statistics in such cases, is another evidence of the clinical tendency to underemphasize and disregard that which does not at the moment cause pain or physical discomfort. Great as is the debt that the profession owes to McKenzie and his co-workers for extending our knowledge of heart pathology, we must deplore his drastic criticism of the practice of life insurance companies in declining or rating up cases with valvular heart defects, a practice fully justified by the tabulated experience on such risks. This tendency to belittle physical impairments which are not immediately disabling has been carried to a *reductio absurdum*. One can find in the literature respectable authorities who will assure us that almost any physical impairment that can be named, whether it be

mouth infection, constipation, mitral insufficiency, defective tonsils, albuminous urine, arterial thickening, high blood pressure, or even a history of syphilis, are without any material or important influence on physical efficiency or longevity.

Other conditions, often loosely regarded as not materially shortening life, have been shown by medico-actuarial studies of 2,000,000 insured lives in this country to have a very profound influence. Syphilis, with a history of thorough treatment and apparently cured ten years prior to application, shows a mortality of more than double the normal; gout, within five years shows 90 per cent. extra mortality; rapid pulse 90 to 100, no other impairment or assignable cause, 72 per cent. above the normal; rapid pulse 100 or more, 105 per cent. above the normal. At age of 45, 50 pounds overweight, shows 50 per cent. extra mortality; 70 pounds overweight, 75 per cent. extra mortality. Average weights at age of 45 show a mortality 5 per cent. above the optimum rate, which is found at 20 pounds under the average weight. So much for your average man!

Blood pressure looms large in the lay as well as the professional mind at present, but there is not always a good sense of proportion observed in discussing it. There is a common practice of adding 100 mm. to the age and calling that "normal." This is approximately correct for the younger ages, but is far from correct for older ages. The average blood pressure at various ages has been studied in independent life insurance investigations covering more than 50,000 lives, and our own findings closely agree with these results. The systolic pressure at ages 15 to 20 is 118; at 60, it is 135. J. W. Fisher⁴ has reported an excess mortality of 9 per cent. among insured lives with an average pressure of 141; 63 per cent. excess mortality among those with a pressure of 152, and 236 per cent. excess mortality among those with a pressure of 171.

Blood pressure is of course a symptom in many possible conditions, but we are justified in regarding as sub-standard lives those whose blood pressure is persistently more than 15 mm. above the average for the ages as above given. Janeway's caution on this matter has good support in comprehensive life insurance experience.

In passing it may be said that in our studies it has been disclosed that the predominant physical characteristic in high blood pressure is overweight—50 per cent. of high blood pressure cases showing 20 per cent. or more overweight. The predominant characteristic in low blood pressure is underweight—70 per cent. of such cases showing marked underweight. High blood pressure subjects show only 24 per cent. of underweights, while low blood pressure shows only 17 per cent. of overweight.

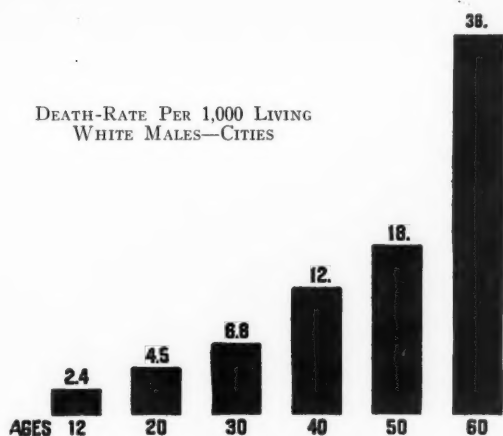
In this relation, the studies of Francis G. Benedict⁵ on a group of individuals maintained on a low level of metabolism and bailed of considerable reserve nitrogen, should be borne in mind. I took the pulse of a member of this group and found it below 30. Such low pulse rates and systolic pressure below 90 were characteristic of the group, and yet they showed normal physical endurance and were in active work, showing that low blood pressure may be physiological under certain conditions. We frequently meet it, however, in the tuberculous, ill-nourished, those with focal infection and the "no man's land" of neurasthenia.

Many of these conditions mentioned are obviously preventable. Many can be favorably modified and their life-shortening influence neutralized to some extent. If we permit people to drift in the belief that their disabilities are negligible, this is as unwise as to exaggerate their symptoms or unduly limit their activities. In an experience extending over seven years and covering a group of several thousand policy holders that have been periodically examined for the purpose of lengthening their lives were included all these types of sub-standard risks, with an estimated expected mortality of 200 per cent., or double the normal. The actual mortality in this group was 10 points below the normal, showing an apparent reduction in the death rate of more than 50 per cent. These people were all informed of their defects, given proper conservative warning as to their hygienic needs and informed of the proper medical treatment to seek.

It is pretty difficult to get a practising physician to become very much excited over a so-called robust man, who is 40 or 50 pounds over weight, yet the mortality experience shows that this condition carries as heavy a mortality as a mitral lesion, at least in mature life.

We are now concerned with the problem as to how rapidly vitality wanes with advancing years and why it wanes. I have endeavored to show some of the reasons why it wanes, and I shall now seek to show the rate at which this physical failure progresses and the impairments that accompany it. The following chart exhibiting the movement of mortality from the age period where it is lowest (12) to that where it is highest, shows us at a glance the curve of physical failure. It punctures the bubble of self-sufficiency. It shows us that the testimony of the draft examinations in this country and in England, as well as those made in such services as it has been my privilege to direct, is consistent and a true reflection of underlying conditions.

The testimony of the draft, briefly stated, is to the effect that about 47 per cent. of the men examined were found with defects worthy of record. Approximately 33 per cent. were declined for active military service.



U. S. LIFE TABLES, CENSUS OF 1910

It is interesting to note that the increasing physical disability with advancing years revealed by the Life Extension Institute examinations and the draft examinations is paralleled by the advancing death-rate even in the years supposed to be characterized by youthful vigor.

Bear in mind that in the draft only the prominent defect was recorded. This means that millions of defects, perhaps of more importance than the prominent defect, were submerged in the records. That is, a man might be declined because of extremely faulty vision and perhaps have some much more serious organic defect which was not sought for. This fault will always occur in any tables that deal with individuals and not with impairments. A man with tuberculosis may have an apical tooth infection that will bar his recovery from tuberculosis until eradicated. I have seen cases of syphilis that failed to improve under specific treatment until mouth infection was cleared. Robert Louis Stevenson recovered from advanced tuberculosis only to die of apoplexy. Arterial degeneration in his case was more serious than tuberculosis because it could not be cured. A man with a valvular heart defect may have syphilis, or gastric ulcer, or a number of things which in the aggregate are quite as important as the heart defect. The so-called "prominent" defect may be only the register of a more serious etiological factor that does not appear in the classification.

I am presenting some tables covering the analysis of 10,000 examinations of industrial groups, representative average workers, by the Life Extension Institute, and other tables showing an analysis of 5,000 examinations at the head office of the Institute of members voluntarily applying for a physical survey.

ANALYSIS OF TYPICAL INDUSTRIAL, COMMERCIAL AND INSURANCE GROUPS—
LIFE EXTENSION INSTITUTE

(Figures Derived from More than 10,000 Cases)

	<i>Industrial</i>		<i>Commercial</i>		<i>Life Ins.</i>
	Men	Women	Men	Women	Men & Women
	Av. Age	Av. Age	Av. Age	Av. Age	Av. Age
	34	25	26	26	37
	%	%	%	%	%
Class 1	0	0	0	0	0
Class 2	10	23	10	12	6
Class 3	41	54	52	58	63
Class 4	35	19	27	21	21
Class 5	9	4	9	9	7
Class 6	5	0	2	0	3

ANALYSIS OF 5,000 INDIVIDUALS TAKING PERIODIC PHYSICAL EXAMINATION
AT HEAD OFFICE LIFE EXTENSION INSTITUTE

	% All Ages	% Under 25 yrs. (8%)	% 26-45 yrs. (54%)	% 46-65 yrs. (34%)	% 66 + yrs. (4%)
Class 1	0	0	0	0	0
Class 2	1	—	—	—	—
Class 3	16	27	18	11	..
Class 4	25	32	27	22	..
Class 5	51	37	50	56	61
Class 6	8	4	5	11	..

Class 1—No physical defects.

Class 2—Minor defects requiring observation or attention.

Class 3—Moderate defects requiring hygienic correction or minor medical, dental or surgical attention.

Class 4—Moderate defects requiring medical supervision as well as hygienic correction.

Class 5—Advanced physical impairment requiring systematic medical or surgical attention.

Class 6—Serious physical defects requiring immediate surgical or medical attention.

A glance at these figures shows what is going on beneath the skin and clothing of civilized man. If we found such conditions prevailing among reindeer, buffalo, rabbits, elephants, tigers, or other animals in a state of nature, we would consider that such organisms were in a very decadent condition. Man has used his brain to offset his physical deficiencies and thus has maintained himself, although races like the *cro-magnon*, after flourishing for thousands of years and reaching high development, have ultimately passed out. Have we any right to regard this nation as chosen from all history to prevail? If we carry on our civilization it will be because we have the intelligence to attain adjustment and not just because we are Americans. Where in a state of nature will you find a flourishing and dominant race of animals with physical impairments such as are reflected in these charts?

In a series of 4,000 consecutive X-rays of the jaws of members of the Institute, 62 per cent. showed root infection.

The plea in this paper is not for mere length of days, strongly as I have stressed the possibility of extending the human life cycle. The rational plea is for extending the health cycle, the health span, the period during which vitality is at a high peak, when the capacity for living is greatest, when our reserves are ample and our bodies free and untrammelled by the limitations and handicaps which are well defined in the average civilized man even before middle life.

In the face of these experiences no one can question the tremendous importance of periodic physical overhauling, not only of school children but of adults at any age. In what way can this be brought about?

First, this phase of preventive, or rather constructive, medicine, which I have emphasized, should be more thoroughly taught in our medical schools. Every graduate in medicine should be equipped not only to make a fundamental physical survey, regardless of his interest in any specialty, but he should be saturated with these fundamental principles which will stimulate him to more enthusiastic co-operation with the demand on the part of the general public for physical inspection and counsel on how to live.

Second, not only school children, but adults, require to be educated on the value of periodic physical overhauling and hygienic measures, as well as prompt medical, surgical or dental treatment for the correction of defects. It is important that, regardless of any special machinery provided for this purpose, as through life insurance companies, the great industries, or the like, every citizen shall seek from the best available source a protective service of this kind and not postpone his visit to a medical man until pain or obvious physical failure compels such action.

Third, the life insurance companies can afford to extend to their policyholders this privilege of periodic physical examinations without charge, as the resultant lower death rate will undoubtedly defray the cost, and the medical profession can afford to co-operate in making these examinations on a moderate basis of cost, inasmuch as the results will be wholly in the interest of scientific medicine. Such a system, if properly applied, would bring millions of people under medical supervision and instruction who are now drifting neglected or dallying with unscientific and quack methods, many of which are now masquerading under forms that attract even cultured and sincere health seekers. Through companies employing the Life Extension Institute alone, more than 600,000 people are entitled to this privilege, and a few of the leading companies are extending to a limited number of

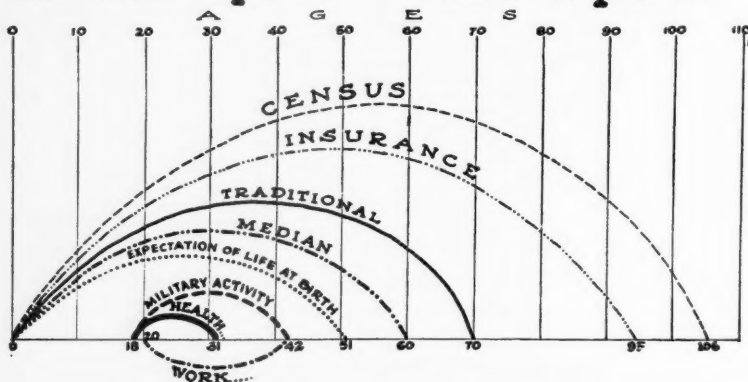
their policyholders this privilege of physical or urinary examinations. More than ten million people should be brought under this system.

Fourth, in the great industries, industrial medicine is rapidly bringing vast numbers of workers under medical supervision. While the regular periodic physical examination is practiced in a limited number of places, the principle is recognized in a number of important plants. A periodic examination is required through the Institute of important groups and plans are developing for co-operative services of this type for the rank and file of workmen.

Fifth, a National Department of Health to co-ordinate all activities for physical education of school children and related measures.

Through the operation of the agencies above named much is to be hoped, not only for the physical betterment but the setting up of better

Health Span ~ Life Span ~



(18-31) **HEALTH SPAN** or Period of Physical Freedom and Full Vigor

(20-42) **WORK SPAN** or Period of Maximum Productivity in Industry

Life Extension Institute, Inc.

health ideals; indeed the recognition of these higher health ideals transcends all else, as otherwise there will be lacking the motivation for developing and making fully effective any of these measures.

I would also appeal for more extensive and intensive post-mortem study of tissue changes at the earlier as well as later periods of life. The percentage of cases shown in these tables with signs of organic change or organic insufficiency, arterial thickening, traces of albumin, blood pressure changes, etc., even in the earlier age periods, is significant and do violence to many preconceived notions; yet Simnitzky found arterial changes in 27 per cent. of autopsies among individuals under twenty-five. Saltikow has averred that arterial degeneration in

its germination is a disease of youth, and there is much evidence in support of that view. Surely arterial degeneration does not arise overnight, and the frequent finding of that change in middle life as a clinical accident entirely apart from the numerous deaths in middle life from such causes sustain the probability of widespread earlier arterial changes which are overlooked because they are not sought for until symptoms arise. Allbutt is particularly sound on this matter,⁶ but he stumbles badly when he talks about the "wings of time" having anything to do with arterial changes.⁷ Fancy the wings of time flapping about our arteries! It is either a poison or an organism without wings that does the damage. It is important that we cease personifying time, especially since Einstein.

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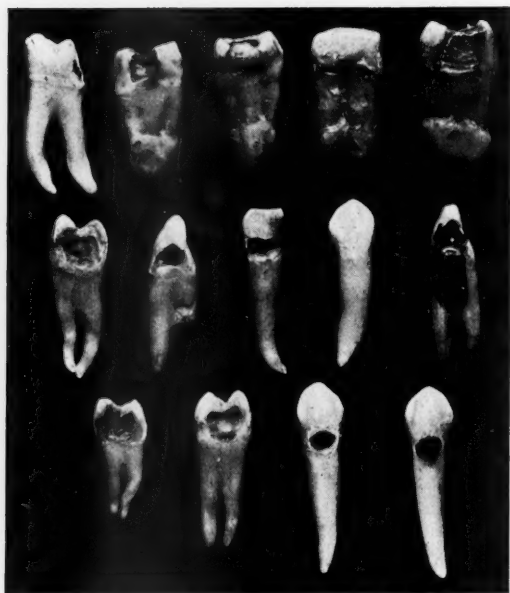
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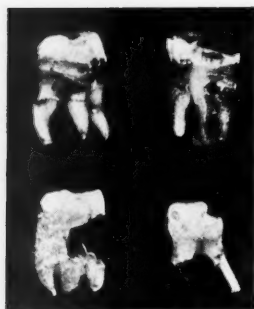


Dental Anomalies

(Continued from December)



DR. R. S. VANHISE
Covington, Ohio



DR. R. B. MOORE
Wapello, Iowa

DENTAL LAWS

Foreign Information

DENTAL LICENCE REQUIREMENTS FOR FOREIGN DENTISTS IN THE UNITED STATES OF BRAZIL, SOUTH AMERICA

By Alphonso Irwin, D.D.S., Camden, N. J.

BRAZIL

1. All applicants for a dental license in Brazil must undergo an examination.
2. All examinations and writing must be in the Portuguese language. No interpreter is allowed.
3. The applicant must have reached the age of twenty-one years or over, and possess a good moral character.
4. He must possess a diploma from a recognized dental college, signed properly by the Secretary, Registrar, Dean, or Provost of the college.
5. His diploma must be validated by a license from the Board of Dental Examiners of the State in which his or her college is located.
6. The diploma (and license) must be "authenticated" by the Secretary of State at Washington, D. C. (As a matter of convenience, the endorsement of the Governor or State Secretary of the State wherein the applicant resides, is accepted.)
7. The diploma (and State license) must be "certified" by the Brazilian Embassy, Mr. Domicio de Gama, Ambassador, 1780 Massachusetts Ave., Mr. S. L. de Modesto Leal, Second Secretary, 1737 H St., Washington, D. C.; or
8. The diploma (and license) must be "vised" by the Brazilian Consul General, H. C. de Martins Pinheiro, 17 State St., New York City, N. Y.
9. The diploma (and license) must be "vised" by the (American) Consul resident in the State of Brazil, where the application for a license is made, and the Consul's certificate in turn "certified" by the Minister of Foreign Affairs.
10. Translations of diploma (license and all credentials) must be made into the Portuguese language, upon stamped paper, by a Public Translator, who shall sign same and appear before the Secretary of the Faculty of Medicine in the college located in the State where the applicant desires to procure a license to practise dentistry.

11. The applicant must, if his credentials are accepted, present himself upon a date appointed by the Secretary of the Faculty at his office.

12. The candidate must bring with him his translated, "vised" certified credentials and two witnesses, neither of whom is a minor or relative, who shall declare in writing that the candidate is the lawful owner of the diploma (and other credentials).

13. The candidate must present a petition, written upon "stamped paper to the value of \$1.00," asking to be inscribed in the Faculty and to be allowed to take the examinations necessary for the re-validation of his diploma.

14. The applicant must take the last year of the course in dentistry of the local (State) Medical College; or better still, take the two years' course; one authority advises taking a three years' course, owing to the difficulty of the language.

15. At the end of the last collegiate year, the candidate must take the examinations. The examinations embrace the same group of subjects and are conducted in the same order as prescribed for the Alumni of the local dental school. They are stated in general terms as including: Anatomy, Physiology, Histology, Dental Prosthesis, Dental Clinics and Surgery. Provisions are made for re-examinations in case of failure in the first instance. The fees for the re-validation of a dental diploma are the same as those of the corresponding year in the course of the dental college.

16. By substituting the Spanish language for the Portuguese, the name of the college and the Secretary of the Dental Faculty as well as the corresponding yearly college fees of the dental school situated in the capital city nearest where he or she desires to locate, including also the officials representing such nation, a foreign dentist will find that these requirements, with few if any alterations, will apply to the principal countries of South America.

17. It should be understood that they do not have Boards of Dental Examiners in the different States of Brazil, similar to those bodies in the United States of North America, but the examinations are conducted by the dental faculties of the colleges and are evidently under medical supervision.

18. It should also be noted that "Dentists are prohibited from performing operations which are not connected with their profession, may not administer internal remedies or anesthetics."

20. Attention is called to the representations that dental examinations are universal, uniform, and *rigid* throughout Brazil, and the Latin Republics of South America.

21. It is obvious that the professions in each of the countries of South America are reserved for native graduates, as far as possible.

22. A new Dental Ordinance has gone into effect since 1917.

EXPLANATORY

Dentists should realize that Brazil covers a vast territory, 3,209,807 square miles; population, 24,000,000; divided into 20 states, each one having its own license system (also one territory and one district), which facts have an important relation to our subject. Like the country, the topic is a big one, and what we say applies to all foreign-born as well as American dentists. Brazil is a land of gigantic possibilities and inhabited by wonderful races of men possessing all degrees of physical, mental, and moral development.

GENERAL REQUIREMENTS

The Portuguese language must be spoken. We submit the dental license requirements in the principal states, obtained from diverse authorities, enumerating only the most essential requisites.

Para, Brazil. "In regard to the legal requirements to be complied with by dentists desiring to locate in Brazil, I have been informed that foreign doctors had only to show their diplomas and if they were from recognized institutions, that they could practise where they pleased. This, of course, would in a measure be subject to local or State laws.

"It is my belief that this city does not offer any great inducements for a foreign dentist, and the present local demand is supplied by natives, most of whom received their education in North America."

The above opinion was received from a prominent official prior to January 1, 1917, and is quoted to show that it was easier for an American dentist to locate in Brazil in former years than it is now.

Rio de Janeiro, Brazil. In order to obtain a license to practise dentistry in Brazil, the graduate from a reputable dental college in the United States of America would be compelled to undergo a technical examination of the most comprehensive sort and in the Portuguese language.

An official living in the same city writes:

"Your diploma would mean nothing here, but you would be compelled to undergo a technical examination of the most comprehensive sort and in the Portuguese language. The prospect of your success after that would depend upon your abilities."

Para, Brazil. An American to qualify in the United States of Brazil as a dentist in good standing, will have to observe the following: His diploma must be recognized and certified to before a Brazilian Consul; his duly legalized diploma will then have to be presented by

himself before the faculty of either the Rio de Janeiro, Bahia, or Sao Paulo College, any one of which is duly qualified to make the necessary examinations and pass the proper certificates. It will be necessary for the applicant to remain for a period of not less than one year at one of the above named colleges. The applicant if successful is then qualified to practise, subject only to the usual taxes and contributions that each State has for this and similar professions.

Pernambuco, Brazil. All foreigners to be allowed to practice dentistry in Brazil, must pass an examination in the Portuguese language at the Government Medical Institute (Faculdade de Medicina) in the city of Bahia, Brazil.

It is made exceedingly hard for a foreigner to get through, and unless you have capital to carry you for a year or more, your chances would be nil.

Bahia, Brazil. No. 1. We have no special law or regulations with respect to the practice of dentistry, except the general regulations of the Medical Academy which requires every practitioner to be the holder of the degree of this Academy. This degree is conferred upon graduation from a course of two years study. Any applicant with a foreign degree must pass an examination conducted in the Portuguese language under the auspices of the Dental Committee of the Academy of Medicine.

No. 2. The Academy does not confer any license, but upon examination and approval of the applicant, he is authorized to practice the dental profession in Brazil.

No. 3. The examinations are held in March and October of each year.

No. 4. Address the Secretary of the Medical Academy at Bahia.

(To be continued)



DENTAL ECONOMICS

Costs and Receipts in Practice

By George Wood Clapp, D.D.S., New York

Article 2

In the first article of this series, practices were grouped by the amounts of gross annual receipts, which is a common but not very satisfactory method of arrangement. 176 practices reported annual gross receipts of less than \$5,000. The average net receipts were \$2,463, but this average does not give a correct picture of the conditions within the class.

Four of these practices reported office expenses of 55 per cent and annual net receipts of less than \$1,000.

Twelve practices reported net receipts between \$1,000 and \$1,500. One dentist who conducts a practice of \$4,544 gross had left for remuneration not more than \$1,260.

Twenty-seven practices reported between \$1,500 and \$2,000 annual net receipts. The gross receipts ranged from \$2,300 to practically \$4,800. The \$2,300 practice returned \$1,550 net, while the \$4,800 practice returned only \$1,930 net.

Forty-five practices showed net annual receipts between \$2,000 and \$2,500. The annual gross receipts ranged from \$2,400 to \$4,800. The \$2,400 practice showed nearly as large annual net returns as the \$4,800 practice.

Fifty-three practices showed net annual receipts between \$2,500 and \$3,000. The annual gross receipts ranged from \$3,200 to \$4,900. The \$3,200 practice showed net returns practically identical with those of the \$4,900 practice.

Twenty-five practices showed net annual receipts between \$3,000 and \$3,500. The gross receipts ranged from \$3,800 to practically \$4,900. The net receipts in the \$3,800 practice were practically identical with those in the \$4,800 practice.

Ten practices showed net receipts between \$3,500 and \$4,000. If the reports are accurate, the practices are well conducted from the economic point of view, though it is doubtful if a dentist can conduct his practice on an expenditure of only 15 per cent of the gross receipts.

The Fee Question*

"AND THE PEBBLES WERE DIAMONDS"—BUT THEY DIED POOR

By Leonidas F. Smith, D.D.S., Indianapolis, Ind.

The Dental Profession today is not a paying profession. Very few dentists make a fortune. Not many have large incomes, or own large farms, flat buildings, or have large bank accounts.

I know an M.D. who buys and pays cash for a farm very often. I knew him to buy and pay \$2200.00 for an electric automobile to ride to and from the office. He showed it to me one morning and remarked that it was foolish to spend so much money for a car for his own private use, but felt that on account of his health he really needed it, and anyway he would make it back again in two weeks. How many dentists can feel confident of paying for a \$2200.00 automobile just any old two weeks. This doctor did that snaring tonsils and blowing noses. I can produce all kinds of examples in medicine and law to show you that there is not the room at the top in dentistry that there is in either of the other two professions. Now I really think it is all the fault of the individual dentist.

The big thing about dentistry, like medicine, is its service to humanity, but if we are to serve humanity best, we must be made comfortable enough to devote our best to the service. There must be two sides to the question—one to serve well and the other to pay for that service, according to its real value. Our work is all technique—all five and ten finger work. It is "hand" work, consequently is circumscribed. Therefore, if we are to make money, we will have to devote our energies to quality and not quantity.

The dentists who are practicing dentistry as they learned it in college are the fellows who are holding down the standard of the entire profession. A dental college is the most elementary kind of a training school, where only fundamentals are taught. The technique taught in the dental colleges is not the newest and most advanced methods—it is the old tried and proven method; therefore, when a dental student is graduated from college, it should mean to him, that he is just ready to begin the study of dentistry. He should, of course, start immediately to build up a practice, based upon the knowledge and experience which he has been able to acquire, but he should be ever on the alert for new methods and technique, and should not only watch other men in the profession to see what they are doing, or attend dental meetings and read dental literature for new ideas, all of which are absolutely essen-

* Read before the Third District Dental Society of Indiana, at West Baden, Ind., October 12, 1921.

tial, but he should develop ideas and technique of his own and should pass them along for the benefit of the other fellow. There is no dentist practising who does not happen onto an easier and a better way of doing a certain piece of work, but how many of us tell the other fellow about it? Most of us feel that we do not have experiences that are new or original, we are always looking to find them in the big men of the profession, consequently, we go to our offices every morning, slave all day and home in the evening, feeling within ourselves (and probably others have the same feeling about us and rightly so) that we are just plodders, with never a new thought or idea of our own.

"The farmers of Kimberley, S. Africa, were dissatisfied. They said they couldn't make a living from their farms. And all the time their children in the fields were playing with diamonds. But they didn't know. They thought they were pebbles. They died poor.

"Lots of dentists are just like those Kimberley farmers. They look for opportunity with a telescope, in some faraway place, when it is really so close that they could reach out their hands and grasp it."

Too many of us are looking to the so-called big men of the profession, to lead us out of mediocrity, to a higher plane professionally, while as a matter of fact, the great majority of us are born leaders and expert operators, if we would but give ourselves "half a chance." We keep *ourselves* down, and not only ourselves but our entire profession. You are not only keeping yourself in the class of long hours and small fees, but you are keeping every man in the practice of dentistry down. This may sound like the kind of advertisement used by a first-class correspondence school, but what is a correspondence school? Simply a cleverly devised system to *make* you study. We should not need to be made to study. It is the most fascinating pastime in the world, once you get into it, and the results are so gratifying. But remember, when you have studied a technique, for instance, and mastered it, if it is something new, you are just half through. Go after some dentist in whom you are interested and whom you know is using an old and out of fashion method, get him interested and stay with him until you get him to studying. Carlyle says, "All that mankind has done, thought, gained or been, is lying as in magic preservation in the pages of books." How long would it take to raise the average of our profession if we would all put our shoulders to the wheel? And keep this in mind, the wheel cannot stand still, it must either go forward or backward, and it is up to each individual in the profession to see to it that it goes forward and not backward.

The Dental Societies all over the country constitute the *real* dental college. Just think of the possibilities for knowledge and advancement.

Are we taking advantage of the opportunities that are lying in our own back yards, or do we, like the Kimberley farmers, consider them only pebbles?

Enthusiasm and co-operation. These are the gold-dust twins that will brighten up the horizon of the Dental Profession, if we will put them to work. Speaking of co-operation, the lack of it is doing more to keep dentistry on the barber-shop level than any other thing. In one community in the State of Indiana, I regret to say, the dentists are still competitors. They have no idea of what the others are doing and do not care so long as they can make a living, and that is about all they are doing and all they will ever be able to do until they get together. The old slogan, "Competition is the life of trade" has served its day and has been relegated to the scrap heap. Germany was a strong competitor for the commerce of the world and that very thing sounded her death-knell. She would not co-operate.

There is another very grave reason for our abbreviated bank accounts, and that is the fact that speaking collectively, dentists are poor business men. You are probably thinking of a dentist among your friends or acquaintances who has made money by the practice of dentistry as well as outside investments. I think I am safe in stating that he is the exception rather than the rule. The reason is what I would call reactionary. What I mean is this: The average dentist, slaving along day in and day out, trying to make a little money, is too busy to think up new business methods for his office; it is all he can do to stand at the chair all day and do his regular routine work. This keeps him from trying out business methods and even keeps him from looking up some real safe investment for the little he has been able to save beyond his expenses. On the other hand, the fact that he does not take the time to work out some way to save himself and improve himself to make better fees, is the big reason for his continuing to be a human machine, year in and year out.

What, you ask, is the remedy? I believe that the "first aid" treatment for a dentist who has become mired in, both professionally and financially, is the trained dental assistant. Now wait, don't be too quick to say, "You can't get them here," or, "I haven't time to train one," or, "They are more bother than help." If you are in this class you are almost hopeless, I admit, but I will still continue to reason with you patiently.

Elbert Hubbard says, "Things move along so rapidly now-a-days that people who say 'It can't be done' are often interrupted by somebody doing it."

Of course, you will have to pause in your mad rush long enough to teach a girl to be of assistance, but take my word for it if your imagination fails you at this point, that it will be time well spent, for when the

time comes that you can walk leisurely down to your office at nine o'clock, take off your hat and walk straight to the chair, to find your patient already there, your instruments sterilized and laid out on the bracket table for you, all appointments made for the day, all material on hand, and no rush, no bustle, you will feel that you are a real professional man and no slave to the general public.

This is not only easier for you, but more profitable. You will have time for study, experimenting with new technique, post-graduate work, and visiting and consulting your dentists right at home, until the first thing you know you are an expert capable of charging fees which at one time in your career you would have considered "outlandish." What is an expert? An expert is one who uses a definite technique and sticks to it until he masters it. According to this, every man in the dental profession can become an expert. The technique given us for every operation is definite enough and if we do not stick to it until we master it we are not only doing ourselves and our patients a great injustice, but our profession as well.

I cannot make it strong enough that you are throwing money away by allowing patients to sit in the reception room, or putting them off until next week, in order that you may have time to cast inlays, set up teeth, and in fact all the work that is done in the laboratory and a good deal that is done right around the chair, excepting of course, the work right in the patient's mouth. If you are the dentist which you should be and which it is possible for you to be, your time is worth anywhere from \$10.00 to \$25.00 per hour, and you are using this time doing work which you could hire done for that much per week. Is this good business?

If you were hired to manage a dental office, including the dentist, would you be willing to let him take time to sterilize his own instruments, answer the telephone, make appointments, receive and dismiss the patient, or would you want him to put in his time where it would make you the most money, the actual work in the mouth, and hire some good mechanic to do all the rest? The answer is obvious, and yet because the matter is in our own hands, we do not do as well as we would if we were using our brains for someone else.

Take for an example of shrewd business ability, the clothing merchant. Do you think you could *not* learn a good lesson from him? Well, ponder on this: Does he stay in the back of the store or on the balcony, laboring over a set of books to see if he is making enough money to pay his bills at the end of the month, or does he scrub the floors and counters so that the place will look nice and clean should a customer happen in? I do not believe many of them carry on their business in this manner. The successful one, and most of them are successful, stands in the doorway with a Quaker-oats smile that won't come off,

and he gets right down to brass tacks the minute you are across the threshold. He is at the point where real tact and salesmanship is most essential—in other words, where the money is made.

But he does have a bookkeeper, and in almost every instance a hired one and the best he can get. He knows to a penny every day what it is costing him to keep that store open, how much money he takes in and how much profit he is making.

Can you say as much? If you do not know what it is costing you to run your dental office, and are not paying yourself a definite salary, but just spending all the money that you do not need to pay your office expenses, how do you expect to make money and how can you charge a reasonable fee? You do not know what a reasonable fee would be. You cannot charge the same fees as the dentist across the street, or of the man who has been in practice about as many years as yourself, and who does about the same class of work. You might go to the poorhouse trying to do so. In many cases I believe a dentist will think that he has fairly robbed the patient for a piece of work, whereas if he actually knew what it cost him to do that work, he would have been money ahead by handing the patient a ten dollar bill and sending him to another dentist. I have in mind at the present time, the case of a dentist who set a price of \$4.00 for an amalgam filling. He thought this would give him a fair margin of profit. He had absolutely nothing to base this fee upon, and his assistant told him repeatedly that she believed he was losing money at that figure. He did not think so, however, but one day they figured up their overhead expense for the year, reduced it to hours, including a fair salary for the dentist, and found that he made just five cents on a \$4.00 amalgam filling. How soon would he be able to retire on that margin?

You cannot charge a fee compatible with the work performed, unless you know how long it took you in actual minutes to do that work, including all preparatory work in the mouth, laboratory work and time to set it. This means that you will have to have an assistant to keep track of this time. The best method to keep it accurately is by means of a time-stamp, using a sheet for each patient, showing the time he gets into the chair, and the time he leaves. Add to the total of this, the total time spent on the work outside the mouth, and if you know the cost of your overhead per hour, you can easily figure the cost of each piece of work. The material, of course, must be included. Your overhead should include a good salary for yourself. There is no hit or miss about this. You have it in black and white and the more you can get for a refined piece of dental work, above its original cost, is the amount of profit to you.

In cases where it is necessary to make estimates, especially where it is an important and essentially a high-priced piece of work, I think a

good thing to do is to take a study model of the mouth, figure as closely as possible how long it will take you to do the work, the amount of material required, and leave a good wide margin between this and your estimate. If the patient remonstrates, in nine cases out of ten you will make more money by letting him go to someone else to have the work done. But where you make an estimate and then do the work, it is just as necessary to keep actual cost of the work as you go along. This will give you in actual dollars and cents your profit on the work and will help you in making the next estimate.

If you do not know how many hours you put in at the chair last year, then figure on an average of so many hours each day, as near as you can, taking out the time spent on vacations. For instance, if you work eleven months in the year, and say twenty-five days a month, and six hours a day, you work approximately 1650 hours a year. Now in this time you have to earn enough to keep up your office 365 days a year and 24 hours a day or 8760 hours. Therefore, your patients must pay you more per hour for your work than if you were working twice as long. Now suppose, for instance, that your overhead expense, including rent, light, heat, janitor service, assistant's salary, laundry, insurance, taxes, materials, depreciation, and your own salary, equals a grand total of \$5000.00 a year. This means that you must take in more than \$3.00 for every hour that you work, and that you must work at least 1650 hours, before you have made expenses. Therefore, if you spend two hours on a gold inlay, and charge \$5.00 for it, you have lost \$1.00, besides the material, on that piece of work.

Once you establish your office on a sound business basis, and perfect your technique, the matter of fees will take care of itself.

What Denture Service Costs Dentists

By George Wood Clapp, D.D.S., New York

Second Article

The purpose of this article is to present a brief analysis of what denture service appears to cost 38 dentists who report practices with gross annual receipts of less than \$5,000. These practices show such individual differences that averages are of but slight value. The least profitable practice appears to be one with annual gross receipts of \$2,000, and net receipts of \$744. The most profitable practice appears to be one with annual gross receipts of \$4,709, and net receipts of \$3,744. Nothing is known about the accuracy of the accounting in either case.

Nothing is known about the number of income hours actually

worked per year by the dentists who make these reports, and experience seems to show that in practices where there is not a good accounting system, the dentist is not likely to average much more than 1,000 income hours per year from the age of 35 to 55. The costs, as given in Column 6 of the table that follows, have been computed on the basis of 1,000 income hours per year. If the dentists are in the habit of working much more than that, the cost would be correspondingly reduced.

It is probable that the desired information can be better given by reproducing representative reports out of the group than by any report of averages.

In the following table Column 1 lists the reference number by which the practice is recorded. Column 2 records the annual gross receipts. Column 3 the annual net receipts. Column 4 shows the amount of chair time required by the dentist. Column 5 shows the amount of laboratory time. Column 6 shows the cost of the dentures to the dentist, including his remuneration, when based upon 1,000 income hours per year. Column 7 shows the habitual fee received by the dentist, if it is reported.

It should be borne in mind that in all these figures the work is identical; that is, the construction of full upper and lower vulcanite dentures for one mouth at one time.

1.	2.	3.	4.	5.	6.	7.
86D	\$1,580	\$1,210	8½	6½	\$23.70	
76D	2,000	744	3	2½	11.00	\$50.00
27D	2,560	1,290	6¼	14	51.84	60.00-80.00
89	3,241	2,616	4½	10	47.00	50.00
70D	3,427	1,867	5½	4	33.58	50.00
83	3,700	2,800	4½	8	46.25	
42	3,854	1,949	6¼	30	139.56	
28	4,000	2,147	6	7	52.00	
46D	4,024	2,224	4	2	29.12	50.00
40	4,200	2,400	6	7	54.60	
16D	4,477	2,845	4¼	3½	34.15	
75	4,781	2,508	10	6	76.49	
46	4,954	3,258	10¾	30	201.71	100.00

One or more of three things is apparent: that the time records are often very imperfect or that some of the service is of a quality which ought to require the dentist to pay the patient or that there has been an extreme development of skill which permits the doing, especially of the laboratory work, in very short time.

Consider, for example, Practice No. 76D. The dentist requires three hours of chair time for the dentures. He does his own labora-

tory work but requires only two and a half hours of laboratory time to make full upper and lower vulcanite dentures. This includes making casts, attaching them to the articulator, making trial rims, arranging the teeth, waxing, flasking, vulcanizing and finishing. In Practice No. 46D, the dentist is even more rapid and does all the laboratory work upon the dentures in two hours.

Reports of cost based upon such time-reports are of course very misleading and should not be seriously considered by dentists who desire to render a quality of service satisfactory to themselves or to establish fees fair to both patient and dentist.

On the other hand, Practices No. 42 and No. 46 report rather more time than will probably be necessary, on the average, when these dentists are masters of the scientific technic they evidently follow. We have found, in the Research Division, that good service requires, on the average, about 30 hours for full upper and lower vulcanite dentures for one month at one time, but cases of such difficulty have occasionally presented as to require more than twice that length of time.

It is apparent that statements of costs and fees amount to very little unless related to a known quality of service, and that dentists who do not have good accounting systems may be basing their estimates of costs on false premises.

The variation in these reports and the very probable inaccuracies show plainly the importance of an exact accounting system in every practice, however small.

Warning!

Look out for a suave individual, formerly employed by various dental depots and now claiming to be selling dental specialties, who, from reports received by *The Dental Digest*, is conducting a "gold scrap" swindle.

This man is at present operating in New York City and vicinity but may, at any time, transfer his activities.

His general method is to gain access by offering dental specialties at attractive prices and mention casually that he can get much more for your "scrap gold" than you have been receiving.

Some of his victims say that he has fulfilled his promises in the case of one or two small refining orders, but after thus winning the dentist's confidence and obtaining a large quantity of scrap for refining fails to return.

In other cases this man has had the dentist cash checks which were returned as non-collectible.

Brother Bill's Letters



My Dear Nephew:

A reply to your question as to how you can shape your life to achieve the success you dreamed of as a younger man, or as much of it as is possible to you, requires that I ask and answer some questions which lie at the very beginning of success. The questions that occur to me are—

“What should a dentist be?”

“When is he a success?”

“By what steps may the unsuccessful dentist achieve success?”

If we take these up one at a time, it may be possible to supply a few of the rudiments of proper answers.

What should a dentist be? There are as many possible answers as there are men to make them, but the one I like best is that he should be a missionary of health and a successful salesman of contributory professional service.

Why use the term “missionary”? Because there are many resemblances between the religious missionary and the dentist as he should be. One pushes back the frontiers of superstition and ignorance regarding religion; the other, by the advances in his profession, is pushing back the frontiers of physical ignorance and bringing health and comfort where otherwise illness or death might be. Neither considers his own welfare first, but each gives that advice which is best for the recipient and is controlled in action by the recipient's decision, as when a dentist advises a patient to abstain from work which might be very profitable to the dentist but could not be desirable for the patient.

Both serve many who cannot pay for that service. Neither is a lip servant, but each gives to high ideals the endorsement of personal devotion.

Why of health rather than of dentistry? Partly that he may hold the patient's greatest interest, health, dominant and direct his advice and service to its maintenance or recovery instead of subordinating health to the glory of a mechanical or individual achievement; and partly that he may continuously inform himself of the effect of systemic conditions on oral conditions and of the effect of oral conditions on the system. There has been much loose talk by dentists who have ascribed to oral condition all possible results from acute appendicitis to a flat tire. More knowledge of health may teach us when to be modest and when to be firm. It is a bigger thing to be a servitor of health than to be merely a plugger of teeth.

Why a salesman of service? Because, unlike most religious missionaries, he has no organization behind him to pay his bills, but must earn a living for himself and those dependent upon him by the sale of such service as patients may select as the result of his advice. Much of his educational work and community service will not be paid for, and service rendered to certain poor persons cannot be paid for.

Why a successful salesman, meaning successful in a monetary sense? Because just in proportion as he rises above the necessity for overwork and worry or for devoting his working hours to other things than professional service, he can extend his knowledge and skill and improve his service. Just in proportion as he is financially unsuccessful so that worries unduly lengthen or intrude upon his working hours, the quality of his service will be lowered, his knowledge limited and his skill cramped. The proper practice of the profession of dentistry requires long and expensive preparation; service is generally limited to one pair of hands so that the output is small; and the period for recovering the initial expense, paying for expensive post-graduate instruction and preparing for old age is shorter than the working period in many other professional lines. On the average, patients are best served in those practices which are financially successful.

When is a dentist successful? I have talked this over with many men in the profession and have come to the conclusion that that dentist is successful who possesses a sane mind in a sound body, who can look back on some years of intelligent and conscientious professional service, who enjoys a rational social development, who faces the present and future without money worries, and who is both able and eager to serve his God, his country, and his profession to at least a reasonable extent without money pay.





"—That step is not only essential but it lies at the very beginning of success. It is that the dentist shall construct a mental moving picture film of himself as the successful dentist of his younger dreams, and that he shall study that picture, not only to learn what conditions seemed to have conspired to bring success, but how he bears himself, in minute detail, in each step of his career. And when he has his film so constructed that he can run it in part or in toto at will, he must try to do daily just what he does in the film or as closely to it as he can."

When shall the dentist be this success? As soon as possible, but at least by the end of his great earning period when he is no longer able to work all day for himself. As his physical powers decline, his knowledge, wisdom and foresight when rendered potent by a comfortable financial condition, may make him of great value to the profession as a whole. He should try to reach this condition of success by the age of fifty years if possible. Unusual men achieve distinct successes long after that age, but the average man finds it increasingly difficult as the years go by. Many a member of our profession is successful according to these terms in middle life, but makes no adequate provision to perpetuate the success and falls into failure in later life.

By what steps shall the unsuccessful dentist achieve success? That is too long a question to be answered in this letter but the first fundamental step may be set forth. That step is not only essential but it lies at the very beginning of success. It is that he shall construct a mental moving picture film of himself as the successful dentist of his younger dreams, and that he shall study that picture, not only to learn what conditions seem to have conspired to bring success, but how he bears himself, in minute detail, in each step of his career. And when he has his film so constructed that he can run it in part or in toto at will, he must try to do daily just what he does in the film or as closely to it as he can. And that is often much closer than he is doing.

Without going too much into details let me make that a little more definite, using you as the example. You say to yourself, "it would be easy enough to make a mental film of myself as a success if I got uncle's fees and had his patients, but I can't see it in this town and with my people."

A good many years in age lie between us and at your age I was worse off than you are, with no one to direct me. I got small fees, when I got any. I did medium to medium-rotten work. I worried and overworked and trod my daily path with little happiness and less hope.

One day it occurred to me that I wasn't to blame because John Smith neglected his teeth until they were full of holes and some were abscessed and that if it wasn't my fault I ought not to be expected to pay any part of the bill for correcting the condition. The man who was to blame ought to pay the whole bill. I suddenly discovered that I habitually conducted myself as if I were partly to blame and that I purposely named low fees, especially when there was much to be done. I had no confidence in myself and consequently no courage. From the hour that conviction dawned, my diffidence began to be replaced by a growing confidence. Don't misunderstand me to mean that I diminished my respect, courtesy or consideration for patients.

Of course I did not, but the glimmerings of justice in our relations dawned.

The very next patient after I got this idea was Jim Gowan, one of our prominent business men, a lodge brother and a good fellow. He needed dental work and had been in to see me a time or two, but was always too busy to have it done.

He sat in the chair, leaned back and said, "What will it cost to put my mouth in shape?" I made a rapid survey of a condition with which I was already partly familiar and named a figure. He straightened up and said, "That's more than twice as much as you told me last time I was in."

Something in me had changed, and I addressed him in a way unknown to me before.

"What have you been doing since you were in here last?"

"Oh, running the store and the farm and a few other things."

"You made some money, I suppose?"

"Yes, a dollar or two," by which reply I knew he had done well.

"You knew all the time that conditions in your mouth were getting worse?"

"Well, I didn't really think that they'd get any better all by themselves."

"And you knew that the worse the conditions the more it might cost to rectify them?"

"That's usually the way in my business, the bigger the job, the more it costs to do it, but I didn't think the cost would go up so rapidly."

"Well, Jim, you've had your choice and made your money. Conditions in your mouth have grown steadily worse. It isn't my fault, as you very well know, and I haven't made any money out of the delay. If you want your mouth put into good shape, it will cost you what I just told you, and if you put it off another year it will cost you twice that much."

"I guess you'd better start right in because if you don't it may cost all I can make between now and then." And I started the work.

One point of this story is that one minute before the conviction formed in my mind as to who is to blame for oral conditions and who ought to pay for remedying them, I should have talked to him in the old deprecating, half-defensive, partly-to-blame way, and I doubt if he would ever have had the work done. Today, more than twenty years after that interview, his mouth is in good condition.

Another point is, that by talking to him on the basis on which he would have talked to me in connection with any form of his business,

I was able to convince him, without offense, where the fault lay. Courtesy and consideration do not require the dentist to be timid.

If you will look at any portion of your mental film of yourself as a success, you will find yourself always courteous but always reasonable; confident in your profession and in yourself as one of its exponents. The honor will shine from the profession upon you until you do something that enables you to return it with interest.

There is just about space enough left to take up one aspect of yourself in your success film which I wish to commend to your careful consideration.

If you will run any portion of the film slowly, you will see that in every part of it you are personally immaculate. There are no stains of coal or ashes or tobacco or automobile oil on your hands and your nails are not in mourning for the sins of their master. Your picture hands are hands which you would be quite willing to have put into your own mouth.

Your linen is spotless and your shoes are shined. I'm sure there isn't one image in that film in which you wear a torn or soiled collar or frayed cuffs or a stained tie. Clothes may not make the man, but George Horace Lorimer says they cover all of him except his hands and face during business hours.

Your first need in realizing the success pictured in your film is to sell yourself to those to whom you are to sell service. They don't know anything about the service; they are buying so much confidence in you. Go to the glass when you read this and study yourself quite boldly and with an unfriendly eye. Find out whether you are new goods just out of stock and pleasing to the eye, or whether you are shop-worn and belong in the bargain basement. If you couldn't sell yourself to yourself for a good price, why should anyone else be tempted to buy?

In your film, your office is spotless, no matter how modest it may be. Turn the same unfriendly eye on it now. What sort of an advance salesman for you is it? I remember it well enough to know what you ought to say, even if you won't say it.

While this is in your mind, take an afternoon off and go to X—and visit Y's office. Never mind him, just sit in his reception room for an hour. Notice the pictures on the walls and how they fit in with the color scheme of the room and how they bear study. Don't try to come back at me with the statement that they cost more than you can afford, because I happen to know better. He hired the office decorated in return for dental work. By watching his chances and developing his taste, he got those pictures from magazines and calendars. And they averaged to cost him just \$3.25 each, framed, glassed and on the

wall. Whenever he gets a chance he opens a frame and substitutes something better than he has, at a cost which rarely exceeds 50 cents. When you can afford one or two real pictures at \$50 or more apiece, well and good, but in the meantime let good taste make up for lack of intrinsic value.

I must close now. This letter has done enough if it leads you to construct the mental film of yourself as a personal, professional and financial success and persuades you to run it frequently for critical study. The practical importance of the film is this, that no success is possible for you in actual fact until you have the mental conception of yourself as the success you long to be. And whatever success you attain will be far less the result of undirected circumstances than evidence of the power of your conviction to master and direct and surmount circumstances.

Bill

Synopsis of Previous Letters in This Series

The first letter, in the October issue, related the nephew's experience in assisting to close the estate of a deceased fellow-practitioner whom he had regarded as successful. There is so little estate as to leave the widow the choice of taking boarders, getting a job or taking the children out of school and sending them to work. This experience causes the nephew to revise his conception as to what constitutes success for a dentist and to resolve that his death shall not find his widow and children in a similar condition.

The second letter, in the November issue, discusses that conception of ethics which places all the rights with the patient and all the obligations on the dentist. It suggests the enlargement of the definition of ethics to include all the more important relations of life and shows that the life distorted by one-sided conceptions will be out of balance in ways not visible to the outside world but of great importance to all whom they directly concern.

In the December issue, Bill discusses different conceptions of service—professional and non-professional—and their relative value to the ones served. What distinguishes a profession from a business? He indicated the haziness of the dividing line and common foundation that underlies different forms of service.

In the January letter, Brother Bill emphasized the necessity for having a goal, and keeping an eye on it rather than watching the path exclusively. He also warned against allowing either of the two groups of office activities—professional or economic—to predominate, as each is important and constantly interact, but either, if allowed to rule, would bring about results not to be desired, though if it came to a "showdown" the economic should be given control, as the results when the professional group controls usually lead to disaster.

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PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to him.

METHOD FOR PREVENTING BUCKLING OF EXTENSIVE BRIDGE WORK BY CONTROLLING SHRINKAGE OF SOLDER.—The soldering of extensive bridge work involving the incisor teeth and the bicuspid on either side is always attended by more or less buckling of bridge because of shrinkage of large body of solder used.

No investment compound will of itself prevent this shrinkage.

Latter can, however, be effectually controlled by use of tinfoil incidental to waxing up of teeth on model.

Cover incisor area of model with tinfoil before waxing up teeth, carrying foil up about sides of abutment crowns, then when teeth are backed up and adjusted to position this entire section of teeth between the crowns can easily be removed, separately invested and soldered and returned to its proper position on original model.

Latter is then invested in usual way, and by use of little more solder the section is attached to the abutment crowns and the objectionable buckling thus overcome, the shrinkage having been confined to the section of teeth previously soldered.

I have experienced most gratifying results from this procedure, and am anxious others should profit by it.

DR. R. V. BLAKE.

Editor Practical Hints:

I have a lower case for a plate. All teeth out but lower wisdom teeth. On the left side the tissues of the cheek (in the region of lower first molar) join the ridge very near the top, leaving practically no ridge. Should the tissues be cut through at this point? If so, would you describe the operation?

C. R. T.

ANSWER.—I do not think it should be necessary to cut the tissue you describe, especially with a firm third molar on each side to use for cast-clasp attachment. Where it is necessary or advisable to cut frenum or other tendinous attachments it is best to cut out a V-shaped section to prevent reattachment in the healing process.—V. C. S.

Editor Practical Hints:

Why is it that in 80 per cent of the devitalizations I effect there ensues Pericementitis?

This is the case no matter what process I employ, or whatever care I may take, or whether these devitalizations be mediate or immediate.

I am very much concerned over the matter.

What would be the best remedy against Pericementitis?

B. S.

ANSWER.—If you have Pericementitis following eighty per cent of devitalizations, I think it is a matter calling for concern, for I do not believe this can occur as a rule without resulting in a focal infection area about the end of the root. The best remedy is to avoid devitalization by the use of a sedative restorative application to the exposed pulp, or where devitalization may be unavoidable use the same sedative dressing in the canals.—V. C. S.

Editor Practical Hints:

What is your opinion and advice about using a removable cast clasp and saddle bridge, replacing cuspid and two bicuspid above?

Patient, middle age and normal health.

G. M. W.

ANSWER.—I believe a removable bridge with cast attachments is the best replacement in this case. This should be made with a heavy, rigid clasp on the molar and an attachment on the other side of the mouth in the bicuspid region, for which purpose the embrasure hook may usually be used to the best advantage. A saddle should be made of thin cast rigid gold over the rugii region connecting the clasps and supporting the porcelain teeth. A rest should be provided also to fit snugly against the lingual surface of the lateral or, if the lateral is weak, the lateral and central.—V. C. S.

Editor Practical Hints:

Would extracting a tooth while patient is unconscious from faint be good practice, or mal-practice?

I enjoy reading your Practical Hints and answers to questions in "The Dental Digest," and find many of them helpful. G. P. W.

ANSWER.—Perhaps some other reader can give you the legal aspect of your question, but if it is mal-practice to extract a tooth when a patient is in a state of faint, I am afraid most dentists who have practiced for any considerable length of time would have to plead guilty to the charge. My personal opinion is that the dentist should get busy mighty quick in an effort to resuscitate a patient who has fainted, but if he is all ready to extract a tooth which will occasion only a moment

or two of delay, I believe he is being kinder to the patient to get the tooth out before consciousness returns.—V. C. S.

Editor Practical Hints:

Kindly inform me through your column when it is advisable to use cast clasps in partial plate work such as lingual bars, palatal bars, etc.

J. R.

ANSWER.—Cast clasps if properly constructed are indicated in all cases where clasps should be used at all, excepting on temporary plates made soon after extraction. In such cases half-round wires set well away from the gums, or no clasps at all, should be used until the mouth is in condition for a more rigid fitting.—V. C. S.

Editor Practical Hints:

Have a case of orthodontia. Boy, about 8 years. Upper central incisors have quite a space between them. Put on an appliance to draw them together. Is there any necessity for cutting away any tissue? What would be a moderate fee for this work? Usual length of time of retaining appliance?

W. R. M.

ANSWER.—Would say that it is difficult to answer your questions. It frequently happens that the upper centrals erupt some little distance apart, but if the occlusion is normal the incoming laterals and cuspids drive them together. Of course if the fraenum of the upper lip passes through between the two centrals and is attached on the lingual aspect of the alveolar ridge it would be necessary to dissect this out before that could be forced together by either natural or artificial means. Of course there is no harm in pulling these together with an appliance, and inasmuch as you have done this it probably would be well to keep a retainer on for a year, examining it occasionally to see that it is perfectly tight.

I should think a moderate fee for this operation which would include the retainer and inspection would be \$50.00.—V. C. S.

Editor Practical Hints:

Within the last two months I have noticed that every instrument kept in my formaldehyde sterilizer has begun to rust. I am using formaldehyde from the same bottle that I have been using for two years, also using borax with it.

What can be the cause of this?

What remedy do you suggest?

E. M.

ANSWER.—I cannot tell you why your instruments are beginning to corrode in your formaldehyde sterilizer when you have used it with-

out corrosion for two years. My impression has been, however, that formaldehyde sterilization is an unsatisfactory method with a strong tendency toward corrosion of instruments, a possibility of its causing a severe chapping of the hands with considerable uncertainty as to its effectiveness as a thorough sterilizing agent. I would suggest the boiling water method of sterilization for all instruments that will stand boiling, and seventy (70) per cent solution of alcohol for some stones, hand-pieces and other things which cannot be boiled.—V. C. S.

Dangerous Dental Fillings

The Vienna correspondent of the London Lancet has called the attention of the medical profession, and especially of dental surgeons, to the existence of dangerous compositions, widely advertised as a substitute for gold, for filling teeth and bridge and crown work. These alloys, consisting of copper and zinc, are similar in their constitution to tombac, but also contain lead, some even as much as 0.5 per cent. These metals are not as resistant to the action of alkaline or acid liquids as are the copper-gold alloys; they are therefore subject to constant dissolution under the influence of saliva in the mouth. Small quantities of lead are thus being constantly thrown into the system. Toxic conditions may result, and have been observed. The alloys have been widely used owing to the great difference in their prices when compared with those of copper-gold alloys.

CORRESPONDENCE

Editor DENTAL DIGEST:

As a dentist since 1867 I have lived comfortably, reared and educated a family, and still support three people beside myself. I trust to escape dental or other charity. But, could "Brother Bill's Letters" have reached me fifty years sooner, there would be less anxiety and probably an assured competency for yours truly, A DENTIST.

Editor DENTAL DIGEST:

Please find enclosed pictures of a second molar tooth with wisdom tooth attached. I extracted this tooth recently and never have seen



anything like it. I thought it might interest some of the boys that read the DIGEST. C. L. MAYES.

Editor DENTAL DIGEST:

Can you help me out on this one?

Patient, male, age 65 years, has had pain for three or four years, originally in left mandible in the region of the mental foramen; pain disappeared to recur about one year ago on the right side of mandible at the mental foramen, and in the right shoulder. Patient has worn full upper and lower dentures for perhaps 25 years. Repeated dental radiographs show nothing abnormal, no necrosis, no root fragments. Wasserman and Noguchi reaction is negative. Blood pressure subnormal. Radiographs viewed stereoptically, however, show periostitis

of about three-quarter inch in length and one-sixteenth inch depth on left mandible at foramen, and on the right side the absorption or rarefaction has developed so far that the mental foramen is unroofed or open. On the right shoulder there is a bony excrescence, which may account for the pain in the shoulder.

Can you suggest any treatment, or can one of your readers?

DR. D. B. S.

Dear Doctor:

In reply to your enquiry, I do not know whether I can help, but I have no doubt that your patient is suffering from systematic toxemia, probably with complications, possibly aggravated by the local mandibular periostitis.

Under the conditions, I think I should be inclined to have a thorough examination of the other foci of infection in the body, including the tonsils, and have an urinalysis made with special reference to indican, indicating intestinal toxemia, also a qualitative blood examination for indications of faulty metabolism, and a blood count.

If you find signs of intestinal toxemia, let me suggest that you have the patient apply to a thoroughly competent nurse for colonic irrigations and to a masseur for chronic conditions along the exit of the spinal nerves. Use a diet containing little meat, no white bread, and roughage, cabbage, bran gems, etc. I enclose a receipt for palatable bran gems of great value in some cases. Or the patient may purchase Wheatsworth Bran Crackers.

It should be thoroughly explained to the patient in advance that neither the irrigations nor the massage may reach the trouble, but they will benefit the systemic conditions and may possibly affect favorably the cause of the sub-normal blood pressure, which may result from or accompany intestinal toxemia. The low blood pressure is an indication of a grave systemic disturbance. It is one of the most difficult of conditions to correct.

It is probable that the condition in the mandible is more a result than a cause, and it appears to me that the case is properly one for exhaustive investigation by a hospital staff.

Yours very truly,

GEORGE WOOD CLAPP, D.D.S.

BRAN GEMS

Mix together 3 cups bran, $1\frac{1}{2}$ cups whole wheat flour, 3 level teaspoonfuls soda, $1\frac{1}{2}$ level teaspoonfuls salt; add 1 cup New Orleans molasses, $1\frac{1}{2}$ cups sweet or sour milk (or buttermilk), raisins and nuts to taste. Bake in gem pans. Makes 16 gems.

Editor of DENTAL DIGEST:

I have been a reader of the Dental Digest for a number of years and here is a case and story that I thought might prove amusing and interesting to some other member of our profession.

A lady came to my office for a full upper denture and it was easy to see that she was far from being prosperous, so I quoted her a price of twenty-five dollars for the work about fifty per cent cheaper than any other case that I have ever handled. She agreed and left a seven and a half dollars deposit and promised to return about four days later.

Failing to return I dropped her a nice letter telling her that her work was finished and to come to the office and bring the rest of the money for same. Following is a letter I received in reply.

GERALD F. WARREN, D.D.S.

Dr. Warren:

I received your letter sorry to say I should ask him first he said that is to high I got no money now I can get teeth yet money is hard to get everybody said you are to high you ought know better twenty five is hard to get i need bread worse today I gen get long without teeth fair awile I ned some to eat worse sorry to say i dont need teeth I need bred

I am the Lady.

Editor DENTAL DIGEST:

Owing to the numerous communications I have received regarding my article, I would deem it a valued favor if you would kindly insert the following in the next issue of your Journal:

Dr. Maurice Smith desires to express his sincere thanks to the numerous commenters on the article appearing in the November Digest, "Some Etiologic Factors of Post Extraction Pain and Treatment." He regrets that he cannot answer and thank each correspondent for the many kind words individually. If the article has helped anyone, he certainly feels that the time and effort spent in its preparation have been justly compensated."

Sincerely,

DR. MAURICE SMITH.



DENTAL SECRETARIES and ASSISTANTS

Methods I Have Found Valuable in the Conduct of a Dental Office

By Juliette Southard, New York City

THIRD PRIZE ESSAY

Begin the day right by getting to the office on time, at least twenty minutes or half an hour before the first patient arrives. This enables one to change into a proper uniform. See that windows, ventilators, etc., are open so that proper ventilation can take place and no stale odor permeate the office; inspect the office carefully and make sure that everything is clean and orderly (the general cleaning being done after office hours each day). *No dust and everything in its place* should be the slogan in every dental office. Devote a moment or two for instructions to other assistant, or assistants if necessary; see that there is a plentiful supply of clean towels and other linen on hand; that the sterilizer is ready and that there is a pitcher of fresh warm water for service at the chair. I have discontinued using the water for the drinking glass from the supply at cuspidor, so many patients asking—“Is this water all right to use?”—in their minds the water flowing in the bowl not being what they should use in their mouth. A clean glass pitcher covered with spotless napkin is sightly, and the warm water is pleasing to sensitive gums and teeth.

A visit to the laboratory is next in order to see that the work is ready or will be ready for each patient as required. To facilitate this I prepare small slips of paper (any scrap paper will do) and write thereon the names of patients, time and day when their cases must be ready, and this record is kept with the work in its respective container. If the laboratory work is sent out, a list is kept of same, noting day and hour when it must be returned, always allowing a reasonable margin of time for any unforeseen delay.

The mail is next taken care of, personal letters and others of interest to the doctor set aside for his attention; receipts are entered on my daily sheet (of this sheet, more later), bills receipted and returned, letters answered, advertisements sifted, those which might be of value placed on file, etc.

The reception of patients must be a pleasant one; an icy welcome or lack of courtesy creates an unfavorable impression. A dental office is not the place for social effusions on the part of the help, but amiability, a cheerful countenance, and *tact* are most valuable attributes for the dental secretary to possess, and unconsciously reflect favorably upon the patients.

In the main, the procedure is the same for each patient, preparation for different operations varying, of course. The necessary instruments, materials, etc., should be ready at the doctor's hand, also the chart; in the event that the office has only one operating room a duplicate set of instruments is imperative in order that there may be no time lost while instruments are being sterilized. A clean napkin is placed on head rest. When patient is seated, a napkin is fastened in place (I do not favor the napkin clasps held together by the usual soiled and faded cord or tape which has become so from contact with perspiring necks that have gone before, or other causes), and a polished drinking glass placed on the stand and filled, before the patient's eyes, with clean warm water. A plentiful supply of *hot* water should always be on hand; it is especially desirable for extractions and other surgical operations. The detail of the doctor's chair work must be carried out by the chair assistant according to his particular needs and instructions. At all times she must be alert and observing, ready for any emergency or helpful service to the doctor and patient.

The dismissal of patients should be as pleasant as their reception. In making appointments one should recall the hour and day the patient prefers, grouping the difficult cases, temperamentally and otherwise, in the earlier hours when the doctor, assistants and patients are at their best. It is also a good plan to group the treatment cases in one period, thus making an effort to conserve the doctor's time. An hour each day left open for emergency or unexpected appointments which always occur in a busy practice is a great saver of nerves and temper; patients do not like to be crowded, nor the doctor hurried.

In estimating fees I have, through conversation with my employer, learned that he values his services at "so much" a day, in order to maintain the standard of income which he has set for himself; this means that eliminating a certain amount of non-productive time the estimated fee must be "so much" for each hour of service or fraction thereof. The secretary's ears should be open at all times to the conversation between doctor and patient touching upon the work in hand, its cost or approximate cost. At the end of the day the doctor takes a few minutes to revise the fees and adjust them where necessary. An effort should be made to make these commensurate with the amount of time expended, plus laboratory service and materials, as well as the financial standing of the patient; if you grade your patients it will be easier.

Collections are always difficult to handle. A credit business leads to trouble. The longer a patient is without paying the less inclined he is to pay. This can be obviated to a great extent if cash is collected by the secretary as the case progresses and the patient told at the time of first sitting that a deposit would be acceptable or is required. This usually leads to the question "How does the doctor like to be paid?" and suitable arrangements can then be made. Patients do not like to be asked for money, but are generally gracious about it if the secretary broaches the subject in a tactful manner. The doctor should never be forced to speak of money, or ask for it, except at the time of the original business arrangements; he should be kept informed of the payments made and the work should not progress if the patient does not pay or seem inclined to do so. The first of each month statements are rendered whether the work in hand has all been completed or not, based upon the amount of service rendered. The word *please* at the bottom of a deferred bill often works magic. A courteous telephone call from the secretary many times brings results. If you can impress upon the patient that he is doing the doctor a favor it pleases him to be an obliger.

In this matter of collections there cannot be set an absolute rule—one must be guided by contributing factors; old and valued patients cannot be treated the same as new and untried ones; a death, or grave illness, or other serious trouble must be taken into consideration.

On my daily sheet, which I have casually mentioned, I keep a record of all moneys received, whether cash or check, and the receipts are copied into my cash book from this record. This daily sheet is prepared at the close of the previous day, the name of patients and time of appointments being copied thereon from the appointment book. When patients are dismissed by the doctor the amount of time they have been in the chair is recorded, also the service rendered and a notation made, if possible, of service to be rendered at next sitting. All this data is copied on the working chart so the doctor can at all times have the full record before him.

The system for keeping records which I have found effective and complete, without excess of detail or work, is a chart 5 x 8 with diagram of upper and lower teeth, and so ruled that name, address, phone, references, date, can be noted; also columns recording tooth number, time used, payments made, date, etc. The service to be rendered is carefully outlined on the diagram by the doctor at the time of the first examination, and changed or corrected as required by later developments. The mold and color number, according to make, of any artificial teeth, crowns, facings, etc., are noted thereon, and if the patient later comes in for a repair a duplicate can be ordered immediately. This chart not only becomes the working chart but also the case record. In

addition to this I keep a separate history chart upon which I note all detail of conversation between doctor and patients touching upon their occupation, business, finances, references, family, friends, associates, former services and dentist, physician inquiries about future work or changes, prices or approximate costs of same, etc.—in fact all matters pertaining to the patient which might be of value to the doctor in future conversations. It pleases the patient to have the doctor recall birthdays, vacations, personal preferences and hobbies; all are data for the doctor. The work attached to the keeping of this case history is negligible as it is garnered from time to time during the progress of the case. These charts with all X-rays and correspondence are kept in a manila folder, name of patient plainly written on upper corner, and filed in a suitable cabinet.

I keep a list of all supplies, medicaments, etc., which are kept together in a closet for that purpose, and buy everything in quantity, paying cash for same, thus saving the discount which in the course of a year amounts to a goodly sum. As each package, box, bottle, etc., is taken from reserve to be used it is checked off the list which is kept tacked on closet door, and when about three-quarters of the material is exhausted an order is placed with the respective supply house for the full quota.

In the general oversight of the office one must be ready to correct any deficiency which may exist. It is often necessary to speak to the other assistants concerning some laxity on their part either in manner, speech, dress, neglect of duties, etc. By saying "I have a suggestion to make Miss ——" it avoids friction. The uniforms of the dental assistants are one of the principal bugbears of the dental office; their absolute neatness and cleanliness is imperative. The secretary may be able to make tactful suggestions to the doctor as well, for the improvement of his office or personal conduct. Patients' criticisms to the secretary, if tactfully repeated, will do much towards correcting personal and professional deficiencies which have unconsciously been permitted to exist. The conscientious dentist who devotes himself to his work is likely to overlook many seemingly unimportant details about himself which are really important, and is glad to have these called to his attention.

If there are curtains at the office windows see that they are always kept fresh and clean; these are often neglected by maids and cleaners. Do not allow old magazines and papers to accumulate in the reception room; the doctor will be pleased to have you provide suitable reading matter, two or three high-class periodicals, pictorial are preferable. File away all dental literature of interest; do not have it scattered about the office on top of cabinets, safe, desk, etc. A few flowers are attractive and only take a moment to purchase, or perhaps the doctor prefers a

fresh growing fern or palm. He will always welcome any thought or idea that makes for the efficiency and attractiveness of his office. Favorable impressions help to increase the financial returns.

I have found that the dental secretary should equip herself with all possible knowledge concerning the various duties of assistance to the dentist. She should not only know how to properly do bookkeeping, typewriting (shorthand is valuable but not compulsory) and good business correspondence, but also familiarize herself with the duties of chair assistant—the mixing of cements, amalgams, etc., and have a working knowledge of the simpler laboratory duties, mixing plaster and investment materials, preparation of modeling compound, wax, etc., unveiling of models, casting of inlays, making gold crowns, selecting teeth, facings, porcelain crowns, etc., according to model and shade. She can also learn the use of the X-ray, taking pictures, developing and mounting, even becoming quite adept in reading them. If the doctor has to call on her for assistance she is able to properly render service. Very often there is but one girl in the office, in which case her duties are many and varied.

The assistant's work is easier if cement slabs are cleaned at once; containers filled with cleaning material and ready in cabinet; instruments sterilized at once—a small pinch of bicarbonate of soda in water helps keep them bright; trays used with modeling compound if coated with vaseline, heated and wiped off with clean dry cloth, are like new; bowl cleaned at once that has held artificial stone mixture or plaster; in spare moments instead of wasting time reading novels, doing fancy work, or gossiping, make swabs for use with iodine and other medications, also small cotton sponges which are much more absorbent than machine made ones; prepare two-inch length of cotton roll puffed out at one end for powder puff jar in dressing room; make sterilized gauze dressings, etc., etc.

An effort should always be made to do away with all things that might cause uneasiness to the patients; do not display instruments or clatter back and forth with trays of rattling instruments; wear rubber heels on your shoes and maintain poise in your manner. Keep all smelly drugs in laboratory and remove at once linen that has become impregnated with same. The telephone plays a big part in the day's work. Do not say "Hello!" "Dr. Blank's office" sounds better and saves time. Patients like to have you answer by saying "Yes, Mrs. Smith" or "No, Mrs. Jones," instead of the usual "No Ma'am," "Yes Ma'am." Remember that they always prefer to feel they are right and that you are the one who has made the mistake. Diplomacy is an art. Keep smiling no matter how trying the situation.

The secretary should interview all callers and learn to discriminate between those who should or should not see the doctor, preferably mak-

ing an appointment of a stated length of time. She can also interview applicants for assistants' positions, eliminating those who would not suit, the doctor making the final choice from the seemingly desirable ones. Once employed they are under her direction excepting when waiting on the doctor at the chair.

In well regulated offices a list is kept of all patients who are to be notified at stated intervals to call for examination. This is simplified if a small blank book is used in which a certain number of blank pages for each month have been set aside, whereon under the respective month is entered the name and address of each patient who is to be notified that month of the coming appointment.

If I could reach each and every dental assistant I should say "Keep your attention upon your job and your mind on the work in hand. Anticipate each phase of the day's work and plan it before you come to it. You will be ready, the work will be easier, and you will accomplish more with less effort and greater efficiency. Your undivided interest in the office will redound to your credit. Do not be a clock watcher." To make oneself "Nearly Invaluable" increases the efficiency of the office and thereby its income.

An Efficient Assistant

By R. A. Stewart, Madison, Wis.

(With apologies to King Solomon)

1. Who can find an efficient dental assistant? for her price is far above rubies and her worth greater than gold, yea, than much fine gold.
2. Her employer doth safely trust in her to keep his office tidy.
3. She provideth flowers for his waiting room table and worketh willingly with her hands.
4. She ordereth supplies with wisdom and keepeth all accounts with diligence.
5. She riseth up early in the morning and arriveth at the office on time.
6. With her own hands she arrangeth every instrument in order and putteth each thing in its place.
7. She is well and strong and loungeth not about complaining of a headache.
8. She is not afraid of a little blood nor at the sight thereof doth she faint.
9. She dresseth in white apparel and keepeth her finger nails clean.
10. She openeth her mouth with wisdom, and on her tongue is the law of kindness.

11. She keepeth waiting patients in good humor all the day long.
 12. Yea, she sympathizes with the suffering ones, she holdeth the hands of the fearful and the trembling.
 13. They appreciate her presence and she rejoiceth with them when their pain is all gone.
 14. She looketh well to the ways of the office and earneth not her salary in idleness.
 15. At the end of a hard day her employer praiseth her, for with her help his efficiency has been increased many fold.
 16. Favor is deceitful and beauty is vain; but the woman that meeteth the requirements of a dental assistant, she shall be praised.
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Meeting of Dental Assistants

The regular meeting of the Educational and Efficiency Society for Dental Assistants, First District, New York, Juliette A. Southard, President, was held on Tuesday evening, January 10th, at 8 P. M. at the Academy of Medicine, 17 West 43rd Street, New York City.

The subject for the evening was, "The Bacterial Factor in the Operating Room Routine from the Standpoint of the Dental Assistant," presented by Dr. Alfred Walker of New York City.

In a clear and concise manner Dr. Walker traced the development of the high-power microscope and the coincident unfolding of the Science of Bacteriology. He described the early theories relative to disease being the result of infection, and how the first definite step towards its proof was taken by Leeuwenhoek in 1683, when he was able to perfect a microscope which enabled him to see, for the first time, living organisms in the debris removed from cavities of teeth, impure water, and other substances. He then named the principal investigators in chronological order and their achievements, special mention being made of Pasteur and Koch for their discoveries of the direct relation of bacteria to disease, 1863-65. Since that time coincident with the development of the high-power microscope, the Science of Bacteriology has progressed by leaps and bounds. Dr. Walker stating the discoveries had been and are being made so rapidly that it was difficult to keep pace with their advancement, new things of this week often being supplanted by the newer things of next week.

Many interesting and amusing anecdotes were related during the address which had a bearing on the development of Bacteriology, and in closing Dr. Walker emphasized to those present the importance of being careful to guard against bacteria and urged them to learn more

of the subject that they might better understand the need of sterilization.

Drs. A. R. Perrin, F. C. Turner, and Henry Fowler took part in the discussion, after which a rising vote of thanks was tendered the Essayist and those taking part in the discussion.

The President of the Society then addressed the meeting and told of the wonderful inspiration she had received only a few days before while in Washington assisting at the ceremonies incident to the dedication and unveiling of the statue of Joan of Arc in Meridian Hill Park. She told how a small group of women through steadfastness of purpose, perseverance, and application to an ideal, had received the recognition of two great nations, France and America, making possible the wonderful achievement. She urged upon the members of the society high ideals, steadfastness of purpose, a resolve to do, that would redound to their credit and bring recognition and honor to their organization as well as place the efforts of womankind to help themselves and humanity on a higher plane.

Fifty guests honored the society with their presence. The next regular meeting will be held February 14th, which the President announced would be of special interest.



DENTAL LABORATORIES

Impressions for Cast Clasps

By I. T. Dresch, Toledo, Ohio

The information contained in the series of articles by Mr. Dresch, of which this is the first, is of quite as much interest to dentists as to laboratory men.—(EDITOR'S NOTE.)

As the cast clasp has almost perfect contact with the tooth, the first step should always be a thorough cleaning of the tooth. If the tooth is cleaned after the clasp is made, the fit of the clasp will be partly lost. And if the tooth is never cleaned, a cavity will invariably result. So the first step should be the cleaning of the tooth, and the second step a talk to the patient of the importance of keeping it clean.

A cast clasp cannot be pliered or otherwise bent or adapted to take up for inaccuracies. The cast metal being composed of rounded crystals, it is easily broken if pliered, because the crystals are torn apart. In wrought or rolled gold, each of these crystals is lengthened out into a fibre, when the cast piece is rolled. These fibres will bend, but the crystals will be torn apart, much the same as so much gravel packed closely together. For those reasons, the cast clasp must be made to perfectly fit the tooth, for it cannot be safely pliered to take up for inaccuracies.

So the impression becomes the keystone of the arch, and no effort should be spared to obtain the best,—nothing less than absolute perfection should be the goal.

As saliva will not incorporate itself with plaster, any saliva that may be present on the tooth when the impression is taken, will tend to produce a rough or porous surface of the plaster. This will result in a rough model, and later a rough and poor fitting clasp. Any oil or substance such as vaseline, will have the same effect as the saliva. For that reason oil or other lubricants is contra-indicated in impression taking for clasps.

In fact the best impression is secured from a clean dry tooth. Plaster always comes nicely away from a clean dry tooth. When it sticks, it is because it is adhering to the film over the tooth. The first step then in taking the impression, is to *remove the film*. Milk of

magnesia is excellent for this purpose. Next, polish the tooth. Then wipe it free from saliva, pack a little cotton around the tooth, and keep it there until you are ready to take the impression.

We have seen that the plaster impression must be perfect, and that means that we cannot draw it away from the tooth in the ordinary manner. Because the bulge of the tooth would compress the plaster, and ruin the impression. So the impression must be split, and removed from the mouth in sections. This is best done by using a sectional tray, trays which can be opened when in position in the mouth. There are several trays for this purpose, and probably the Smedley tray is the best. When this tray is opened in the mouth, it also breaks the plaster impression in two pieces. These pieces will be brought in perfect relationship again, when the two parts of the tray are placed together in the clamp.

Any good plaster will answer for the impression. Some men prefer something which will break a little easier, something like the soluble plasters. Potato flour or starch is added to these plasters, and make it possible to boil the impression away from the model. But this feature really defeats itself, because in boiling away the impression, the cast or model is softened by the water. For that reason it is best not to boil away the impression, but to separate it in the ordinary manner.

When the impression is split in the mouth, and removed from the tooth, all undercuts are automatically eliminated. As there is no spring to plaster, if any undercuts remain after the plaster is split, the impression will be compressed to the extent of any undercuts that are present. So that after the model is poured, the impression can be removed from it in the same manner it was removed from the tooth. In other words it is not necessary to boil away the plaster, and a better model is had by not doing so.

After securing the impression, the next step is to secure a model. There are two methods which can be used, the original technic taught by Dr. Nesbitt, and the improved technic used by Dr. Roach. In the Nesbitt technic an amalgam model is secured from the impression, and a wax pattern clasp is made over it, removed, invested and cast. In the removal of the wax pattern, the clasp is usually distorted, and the result is never sure. In the Roach technic, an investment material model is secured from the impression, and the clasp cast directly against it. This technic eliminates the empirical feature of the Nesbitt method, giving instead, standardization and definite results.

Using the Roach technic then, it will be necessary to use a separating medium, so that the investment model can be removed from the impression. On account of the accuracy which is essential, an ordinary coating such as shellac or sandarac varnish, cannot be used. A material that will *penetrate the pores of the impression* is necessary.

For that purpose ordinary liquid silex, used quite thin, can be used. After painting the impression, walk to the tap and rinse the impression. This should be done immediately after painting, because none of the liquid should be allowed to remain on the surface.

You have probably noticed how plaster gets more or less rough after it has stood awhile. Sometimes a smooth impression becomes a fairly rough impression by lying around the laboratory several days before it is poured. The cast will also become rough for the same reason. For that reason the impression should always be kept green, until it is time to pour the cast. This can be done by opening the wings of the tray, and laying the open impression on a wet sponge. Then don't pour the impression, until you are ready to make the clasp. The more green the model, the smoother it will be, and the smoother the clasp. Do not paint the impression until you are ready to pour the model.

The investment material model must have several features, it must set hard enough to allow the removal of the impression, without danger of breaking the model. It must pour with a smooth surface, and it must keep this smooth surface during the casting operation. Weinstein's Castclasp Investment answers these requirements, if it is not heated over 450 degrees F. during the heating or drying out of the invested case. If it is heated above that point, the plaster will disintegrate, and result is a rough and poor fitting clasp. Taggart's investment having less plaster, can be heated to a greater extent without injury, but this lack of plaster also makes it softer, and easier to injure in separating the impression from the model.

Either material will give good results, if properly used. If you can maintain a heat at no more than 450 degrees F. you will find Weinstein's the better to use. But if you are not sure about the heat, it will be best to use Taggart's. When Taggart's is used, mix it very heavy, so as to have the model as hard as possible. The same applies to Weinstein's, but it is not so important.

(To be continued)

Open the Doors

By B. I. Martinez, St. Paul, Minn.

Let us have the truth with no envy or hatred, but has the dental profession in general done what it might have done to encourage or assist the dental laboratories to attain the high standard of proficiency such as it demands of them?

With the exception of a few dental mechanics or technicians, who

have been made associate members of a district dental society, admission to state and national society clinics is denied laboratory men, and still they are expected to keep pace with the progress made in prosthetic dentistry.

What is the outcome of this exclusion? Simply that 95 per cent of the laboratories in this country, being excluded from clinics and lectures, discourage the higher standards of work because they are ignorant of them and naturally recommend what they know they can produce.

Manufacturers have recognized that the laboratories are competent factors in some communities by seeking their advice and suggestions on new dental products. If this is the attitude of the manufacturer towards the laboratories, the same relation should exist between the dental profession and the laboratories where the need of close cooperation is even more vital. Let us stop and consider.

If 1,100 laboratories in the United States are serving 90 per cent of the dentists, doesn't it seem desirable to fit the laboratories to disseminate the knowledge gained from clinics and lectures to the thousands of dentists with whom they come in daily contact?

It is due to this lack of co-operation between the dental societies and laboratories that the American Dental Laboratories Association was formed with the purpose of reviewing and standardizing methods and technics and securing the services of leading men in prosthetic dentistry to appear at their meetings.

While this national organization will do much to raise the standard of the laboratories we should have the co-operation of the dental societies. In communities where the dental societies have welcomed the laboratory technician the standards of the laboratories are equal to those demanded by the dentist.

The state of Minnesota is the pioneer in "open door policy," and the encouragement and broadminded treatment accorded its laboratories is worthy to be followed by other states.



DIETETICS and HEALTH

Subjective and Objective Hygiene*

Objective hygiene is the doing of things with the person or persons as an object, such as surrounding them with good conditions in the schoolroom, good light, heat, ventilation, etc. In this group also fall physical training, athletics, folk-dancing, playing, recesses, and other recreations. The hygiene of instruction comes under this head. The medical inspection of the pupil is at first objective, and then, if it is to be successful at all, it leads the pupil to doing things for himself and becomes subjective.

The teaching of health laws and conditions, on the other hand, is subjective. It is the endeavor to get the child to do something for himself, to inculcate habits, to form tendencies for right action, and leave him with a lasting impression that will affect conduct.

The purpose of the hygiene of instruction is the counteracting and eliminating of health-depressing influences of school life. It is not only engaged in the endeavor to keep away bad things, but it is engaged also in the endeavor to bring good things into the school.

The earliest efforts were made toward the cure of disease when it already existed; next came the prevention of disease; and now the efforts are made toward acquiring a condition of euphoria (which means a great degree of vigor), or the ability to cast aside all disease influences.

EDUCATIONAL EXERCISES

The results desired from physical training are various; first, neuromuscular education, which is a mental thing. The muscles have nothing to do with it except to abide by the decision of the nervous system, which is trained by exercise. Who has not seen a city man, in the country particularly, going down to a float on the river and confronted with the necessity of stepping into a boat. He will approach the edge of the float with great care, get down and grasp something, put one foot in and then perhaps he will fall overboard. He is a motor dullard, and the motor dullard is an increasing character of our population. On the other hand, another, no doubt, would walk confidently across

* From Dr. Alfred C. Fone's Text Book for Prophylactic Operators.

the float, step in the boat, grasp the oars and row away. That is motor ability, and the motor dullard can only hope to acquire it by exercise and training of the nervous system which controls the motor system. All of the seven hundred thousand youngsters in New York City and all school children elsewhere should have that kind of ability. It consists in coordination of the various body parts, to be alert, accurate, definite, complete and graceful in movement. Most of these coordinations are unconscious, the result of practise, not thought about, but just done. Motor education is thus one of the greatest things in physical training.

HYGIENIC EXERCISES

The other great thing resulting from physical training is health of body tissue by means of exercise of the muscles. When the muscles are exercised everything else in the body is exercised, the heart, the lungs, the arteries, the veins and the nerves, in fact the whole body is made to work in exactly the way it was intended that it should work. If each muscle were taken separately and exercised and brought to a condition of health, and also each organ, as the stomach, liver and spleen, and so on throughout all the organs of the body, it would prove quite a task. That is the modern method of education, by the way, but not modern physical education. Natural exercises of the muscles are used and nature stimulates the rest of the body in the process of repairing the busy muscles.

The method of evolution has been such that those whose muscles have been exercised in walking, jumping, climbing and throwing have survived, and those anemic beings that do not exercise do not survive. So our ancestors, in their more active physical life exercised and kept in health. Exercise is the only way. Therefore physical training is put in the schools to make the tissues of the children healthy and strong. That is the hygienic side of physical training, a very different thing from the educational exercises previously described.

What We Know About Vitamins

We do know a little about vitamins. Those who scoff because they have not seen a vitamin have not themselves seen the east wind, but they have felt its effects. Vitamins are known by their effects.

Vitamins have been divided into three definite chemical types, or compounds, as you please, and are called A, B, and C.

Vitamin A is soluble in fat. It is present in butter fat, egg yolk fat, cod-liver oil, in green leaves, cabbage, lettuce, spinach, carrots and

in the germ of cereals. Ordinary cooking temperature has little effect upon it. It is a growth-promoting substance, and, of course, should be contained in the food of children.

Vitamin B is soluble in water. It is present in the protein free part of milk, in lactose or milk sugar and in that part of rice which is not usually eaten, the rice polishings. One may eat B in the unpolished rice, in yeast, seeds of plants, eggs, liver and other glandular organs, germ portion of cereals, oranges, lemons, tomatoes, apples, grapes, cabbage, potatoes, carrots, turnips and nuts. For this type of vitamin the cooking temperature should not be above the boiling point and perhaps the water should not be alkaline.

Vitamin C is also soluble in water. It is present in cabbage, rutabagas, turnips, lettuce, watercress, lemons, oranges, raspberries, tomatoes and potatoes. It may be destroyed by drying, heat and alkali. Consequently most prepared milks are low in C.

It would be a great mistake to forego pasteurization because that process might eliminate the antiscorbutic property of the milk. The deficiency should be made up with the juices of oranges, tomatoes, carrots and spinach. These juices can be tolerated by infants earlier than was once thought.

The Greatest Comforter

For those who toil, for those who weep, there is no comforter like sleep. Sometimes we think, when making hay, there'll be no finish to the day; the sun is lagging in the sky, and we are tired and hot and dry. We long for evening and repose, but this long day will never close. And yet the longest day will end, the grateful shades at last descend; the wearied ploughman leaves the field and hies him to his lowly bield; the plumber doffs his workday garb, the barber will no longer barb; the night is theirs for slumber deep, and there's no comforter like sleep. This life is like a summer day, and we grow weary baling hay. The hours are long, our burdens gall, the recompense seems all too small; our neighbors get the softest jobs, our smiles all terminate in sobs; we're taxed beyond our modest means, and some one always spills the beans; we get the worst of every deal, and we have corns that will not heal, and so we grumble through the day, in our poor foolish human way. But night approaches and the dark will wipe out all the cares that cark: no more we'll labor in the sun and count the wages we have won; no more we'll sow, no more we'll reap; the greatest comforter is sleep.—*Walt Mason.*



EXTRACTIONS



No Literature can have a long continuance if not diversified with humor—ADDISON

The new year will be what we make it.

If we should win another war soon
we would be ruined.

(The Girl)—Did I ever show you the
place where I was tattooed?

(The Young Man)—Gosh, no!

(The Girl)—Well, we will drive
around that way on our way home.

(Billy)—Does your mother give you
anything if you take your medicine
without crying?

(Sam)—No; but she gives me some-
thing if I don't.

Mr. MacTavish attended a christening
where the hospitality of the host knew
no bounds except the capacities of the
guests.

In the midst of the celebration Mr.
MacTavish rose up and made the rounds
of the company, bidding each person
present a profound farewell.

"But, Sandy, mon," objected the host,
"ye're not goin' yet, with the evenin'
just startin'?"

"Nay," said the prudent MacTavish.
"I'm no' goin' yet. But I'm tellin' ye
good night while I know ye."

It is a striking coincidence that Amer-
ican ends in "I can."

Figures printed by the Commission on
the Necessaries of Life would seem to
indicate that a sandwich consists of very
thin slices of food between very thick
slabs of profit.

February is Washington's month.
Nowadays when anyone talks of Wash-
ington it is usually a recital of the won-
derful things he did. For a change let
us select the other side of the picture
and tell of some of the things George
didn't do. We recall a bit of poetry
to start with:

When Washington was President,
He saw full many an icicle;
He never on a railroad went,
Nor ever rode a bicycle.

His trousers ended at the knees;
By wire he could not news dispatch;
He filled his lamp with whale-oil grease,
And never had a match to scratch.

Through telephones George never roared;
Nor bumped the sky in a flying trap;
He never "shimmied" in a Ford,
Nor dallied with a subway strap!

It is strongly hinted at by certain
authorities that George didn't cut down
that cherry tree we have all read about
in our school books. And now a real
modern historian arises and tells us
that Washington never wintered at Val-
ley Forge. The Continental army was
playing golf at Pine Hurst that win-
ter, and had a post office address at
Valley Forge merely as a blind. And
it is recorded that George seldom lost
a golf game. His best round for 36
holes was 141, or three strokes higher
than a milkman could make it. And
there you are!

(Mrs. Nagg)—You deceived me be-
fore we were married. You told me
that you were well off!

(Nagg)—So I was; but I didn't
know it!

An Austrian crown is worth nearly
one cent, which makes it more valu-
able than some other European crowns.

(North)—You can't tell what a wom-
an means by what she says.

(West)—You can if you're married
to her!

(One of Lincoln's conundrums)—If
you called a dog's tail a leg, how many
legs would he have?

The thoughtless person answers "five,"
but the correct answer is "four," as call-
ing a dog's tail a leg does not make it
one.

A man who became wealthy manufact-
uring mustard said that he didn't get
rich on the mustard that people ate,
but on the mustard left on the plates.
You will never become independent on
the money that you earn, but on what
you don't spend.

FUTURE EVENTS

The next regular meeting of the NEW YORK SOCIETY OF ORTHODONTISTS will be held during the afternoon and evening of Wednesday, February 8, 1922, at the Hotel Vanderbilt, Park Avenue and 34th Street, New York City.

A scientific program, including clinics and case reports will begin promptly at four o'clock. Dinner will be served at about six-thirty o'clock and the scientific program continued at the conclusion of the dinner.

Ethical members of the profession, interested in the science of Orthodontia are cordially invited to be present.

J. LOWE YOUNG, *President*,
18 West 74th Street, New York City.
WILLIAM C. FISHER, *Secretary-Treasurer*,
501 Fifth Avenue, New York City.

THE MASSACHUSETTS BOARD OF DENTAL EXAMINERS will hold a meeting for the examination of candidates on March 21, 22, 23 and 24, 1922. Both dental and hygienist candidates will be examined at this meeting. Applications and fees must be filed at the office of the secretary at least ten days before the examination. For full information, application blanks, etc., address Dr. J. N. Carriere, Secretary, 146 State House, Boston, Mass.

The fifty-fourth annual meeting of the PENNSYLVANIA STATE DENTAL SOCIETY will be held in Syrai Mosque, Pittsburgh, April 11, 12 and 13, 1922. An interesting and instructive program has been prepared. Members holding National Dental Association cards from other states are cordially invited to attend all sessions.

W. L. FICKES, *Secretary*,
East End Trust Bldg., Pittsburgh, Pa.

The Fifty-eighth Annual Meeting of the CONNECTICUT STATE DENTAL ASSOCIATION will be held in the Hotel Taft, New Haven, on April 20, 21, 22, 1922. You are cordially invited to be present and exhibit your goods.

The program promises to be the best that the society has ever presented and will be participated in by Dean Winternitz of the Yale Medical School and several members of the faculty as well as prominent members of the Dental Profession. The study club idea, which has been so successful in the West, will be introduced as a feature of the meeting.

Space will be assigned in the order of receipt of applications and as nearly as possible to fit the requirements of the individual exhibitor. The committee will make every effort to have the exhibitors pleased and assure courteous treatment.

ALBERT W. CROSBY, *Chairman Exhibit Committee*,
59 College Street, New Haven, Conn.

At Rochester, New York, on May 12 and 13, 1922, the Second Annual Convention of the DENTAL HYGIENIST ASSOCIATION OF THE STATE OF NEW YORK will be held at the Rochester Dental Dispensary in connection with the New York State Dental Society Meeting. All interested are invited to attend. More detailed information will be published later.

THE PUBLICITY COMMITTEE.

THE NATIONAL ALUMNI ASSOCIATION OF THE BALTIMORE COLLEGE OF DENTAL SURGERY is planning for a very interesting meeting in Baltimore, May 30, 31, and June 1, 1922, as has been previously announced, and the various committees are looking forward to a large attendance. Headquarters will be at the Emerson Hotel, and Dr. Louis Rossman, 829 Park Avenue, Baltimore, Md., who is Chairman of the Reservation Committee, will be very glad to reserve rooms for anyone desiring him to do so. An announcement will be made as soon as possible as to the rates.

NORVAL H. McDONALD, *Secretary*,
904 N. Charles Street, Baltimore, Md.

THE WISCONSIN BOARD OF DENTAL EXAMINERS will hold license examinations for dentists and dental hygienists June 19 to 24, 1922.

J. L. BLISH, *Secretary*,
Fond du Lac, Wis.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK will hold the 54th Annual Meeting at Convention Hall, Rochester, New York, May 11, 12 and 13, 1922. All literary exercises, clinics, and exhibits will be stationed at Convention Hall.

Officers' headquarters will be at Hotel Seneca.

The Society extends a cordial welcome to all ethical dentists of New York and sister states. The preliminary program will be issued about April 10th, and the official program May 1st. Dentists not members of the State Society may obtain program by addressing the Secretary. Make hotel reservations early. Hotels: Seneca, Powers, Rochester, Hayward, etc.

A cordial invitation is extended to exhibitors. Address Dr. John J. Scott, 905 Commerce Building, Rochester, New York. For further information address
A. P. BURKHART, *Secretary*,
89 Genesee St., Auburn, N. Y.

THE TEXAS STATE DENTAL SOCIETY will hold its 42nd Annual Convention March 13 and 14, 1922, at Houston, Texas.

The special features of the program will be lectures and clinic work by Dr. Boyd S. Gardner of Rochester, Minn., and Dr. Carl Hoffer of Nashville, Tenn., with symposiums and unit clinics by members of the Society.

During the four days following, a post graduate class course will be conducted by Drs. Willis A. Coston, Topeka; Russell W. Tench, New York City; Arthur E. Smith, Chicago; T. W. Maves, Minneapolis, and Julian Smith, Dallas.

J. G. FIFE, *Secretary*,
1813 Main St., Dallas, Tex.